THE

LARYNGOSCOPE.

VOL. XXVII. ST. LOUIS, JUNE, 1917. No. 6.

ORIGINAL COMMUNICATIONS.

(Original Communications are received with the understanding that they are contributed exclusively to THE LARYNGOSCOPE.)

REPORT OF CASE OF BILATERAL, CONGENITAL, OSSEOUS ATRESIA OF THE EXTERNAL AUDITORY CANAL, WITH AN EXCEPTIONALLY GOOD FUNCTIONAL RESULT FOLLOWING OPERATION.*

DR. L. W. DEAN and DR. T. R. GITTINS, Iowa City, Iowa.

Occurrence: According to Bezold and Siebenmann[1] this condition occurs once in every 2,000 cases, and one out of every six cases is bilateral.

In 1909, Forsyth[2] made the statement that but two cases had been reported of bilateral atresia in which there was hearing and understanding of speech.

T. K. Francis,[3] in 1910, reported one case of unilateral osseous atresia in 10,000 cases examined.

Pomeroy,[4] in his book, "Diseases of the Ear," 1886, makes no mention of congenital osseous atresia of the ear canal. Likewise, Politzer's[5] work, translated by Sir Wm. Dalby in 1894, refers only to acquired atresia, not even noting a congenital form.

Pathology: The pathological picture of a typical case of congenital osseous atresia as described by Bezold and Siebenmann,[1] is as follows:

"A small, irregularly formed rudiment of cartilage which is covered with skin, is on the outside in place of the auricle. There is no entrance into the meatus. The mastoid process usually starts directly behind the glenoid process of the lower jaw. Usually, there are rudiments of two ossicles and no drumhead is present. The antrum of the mastoid is most often quite well developed."

*Read before the Middle Section of the American Laryngological, Rhinological and Otological Society, at Columbus, Ohio, Feb. 26, 1917.

These writers give an account of the work of Joel[6] in 1894, at which time he compiled records from cases at post-mortem. He found aplasia of the tympanum and also the drum-membrane. The labyrinth and its windows, together with the stapes, were nearly always found intact. In almost all of the cases, the osseous portion of the canal was represented by a mass of compact or cancellous tissue; occasionally a small defect in the bone could be observed, or occasionally a narrow fissure leading to the tympanum. Usually the tympanum was narrowed or replaced, while the Eustachian tube was sometimes abnormally wide.

There has been much discussion as to the probable pathology in atresia. Some writers base their arguments on clinical observations, others on their studies of the embryological development of the ear. One group claims that when the meatus is deformed, that is, congenitally occluded with bone, the internal ear is also affected; the other group holds that the external ear can be and usually is deformed without the inner ear being affected.

The work of Page,[7] in 1914, presents the most complete review of this subject.

Giving Politzer and Kerrison as his authorities, he says that the bone meatus is not associated with the development of the essential organ of hearing. The greater part of the tympanum itself, including the osseous portion of the Eustachian tube, except a small part of the anterior tympanic wall and roof, develops with the essential organ of hearing in the petromastoid portion, and is not associated with the development of the meatus and auricle in any way. He goes on to say that according to Politzer, the stapes develops from the labyrinthine capsule and a ring-shaped deposit situated laterally to the labyrinthine capsule, thus explaining the fact that the stapes is rarely found missing in these atresia cases, while the other ossicles may be absent.

On the authority of Cassels,[8] writing in the *Glasgow Medical Journal*, in 1876, Page says: "Even in cases where there is total absence of the Eustachian tube, accompanied by absence of an external auditory meatus and tympanic cavity, a normal labyrinth will usually be found, and in all probability a stapes."

Quoting Alexander,[9] he says: "Conclusions were reached after many autopsies by this writer, that in the vast majority of cases a deformity of the ear was limited to either the conducting apparatus or the perceiving apparatus alone."

Page[7] also quotes Costex and Berruyer, who in turn credit

Alexander with the observation that a malformation of the labyrinth always affects the facial nerve and auditory nerve at the same time, and that one may conclude from this that all malformations of the external ear coexistent with facial paralysis, indicate alteration in the labyrinth.

In concluding his discussion, Page gives as his own opinion that it can definitely be stated that cases of defective development of the internal ear are rarely, if ever, found associated with atresia of the external ear in otherwise well-developed infants.

The development of the ear as given by Dr. Prentiss, head of the Department of Anatomy, University of Iowa, agrees with the above conclusions. He describes the middle ear as an uppushing of the first visceral cleft, the malleus and incus as formed from the upper extremity of Meckel's cartilage. The external auditory canal and drumhead are evidence of the inpushing of ectoderm from without, the uppushing of entoderm from within and the overgrowth outward of the skull to accommodate the growth of the brain. The internal ear he describes as derived from the otic vesicle, which pushes in from the ectoderm, then becomes entirely separated from the exterior.

The following represents opinions contrary to these just expressed:

1. S. J. Kopetzky[10] makes the statement that the graver forms of atresia are usually associated with maldevelopment of the middle and internal ears, it being rare to find a well-developed concha. He gives as his authority Link, Jacobson, Blau, L. Wolff and Brieger. He also quotes Schwartze as saying that invariably with grave one-sided atresia, a maldeveloped labyrinth also exists on the affected side, and substantiates his observations by the fact that a test fork on the middle of the top of the head is heard only in the normal ear.

2. F. A. Forsyth[2] states, that congenital atresia is usually associated with malformation of the auricle and in most cases with malformation of the middle and internal ear.

Prognosis: In going over the literature on this subject, one is forcibly impressed that the general trend of opinion of the best men has been and still is against operative interference.

Dench[11] discourages any operative work in osseous atresia cases, saying that results do not warrant attempt at interference.

T. Mark Hovell[12] says that prognosis is bad because of the chance of trouble in the inner ear. He advises against interfer-

ence in unilateral cases and considers no operation is practicable in cases where an osseous mass occupies the place of the external auditory meatus.

Kopetzky[10] states that results of operation are usually bad if functionating apparatus seems to be at all affected.

W. A. Phillips[13] gives as his opinion that congenital atresia of the extended auditory canal should be let alone because of the bad results.

J. C. Beck[14] says not to operate for the same reason.

Ballenger[15] advises against operative interference in these cases.

Andrews[16] gives a fair prognosis based on a case in which the mastoid route was taken and hearing was somewhat improved.

Hershel[17] says that prognosis is very bad, basing his opinion on one case of his own and four cases which he found in the literature.

Bishop,[18] in discussing imperforate auditory canals where there is osseous occlusion, advises against operation and states that the best authorities were at this time against operative interference unless there was only a thin bony septum. He mentions that Politzer advised against operation unless this condition were present.

Milligan[19] advises only to operate when one can palpate the annulus and can demonstrate a passage of air to the middle ear through the Eustachian tube.

Page[7] in his work of 1914 is practically the only writer who gives at all a favorable prognosis in these osseous atresia cases. He says that "operation is warranted in practically every case of bilateral congenital microtia with total osseous atresia which occurs in an otherwise well-formed infant." In his writing he gives the following as the most prevalent reasons given as a basis of non-interference:

1. That where the external auditory canal is deformed and the meatus congenitally occluded, there invariably exists such extensive defect either in the conducting mechanism, or in the perceptive apparatus, or both, that operation is unwarranted.

As an argument against this theory, he refers to the developmental facts and post-mortem findings referred to in this paper under the discussion of the pathology.

2. That the operation should not be performed unless tuning forks and bone conduction tests are found to indicate a functionating mechanism.

3. That it is practically impossible to prevent closure of an artificial canal after it has been made.

This last reason he disposes of by referring to the method of

doing a mastoidectomy, then skin-grafting the cavity, as was done in his case.

Treatment: The following operations I have found described:

1. Bezold and Siebenmann,[1] in 1908, describe an operation suggested and tried by Schriebe. This operator opened into the antrum from the mastoid, made a wide canal by lining the mastoid cavity with Thiersch grafts.

2. Kopetzky,[10] in 1908, cites an operation of Jaeger, in which the mastoid was opened down to the antrum and then left open posteriorly, thus allowing sound waves to reach the middle ear through the mastoid cavity and aditus.

3. Andrews[16] gives record of a case operated upon by the mastoid route. Skin flaps were made and turned down into the wound.

4. Hershel[17] suggests a radical mastoid operation, but indicates a bad prognosis.

5. Dench,[11] in 1900, describes an operation in which the canal is made in the usual site, then kept open by means of a rubber or metal tube until cicatrization takes place.

6. Alexander,[9] in 1908, gives the history of one case in which a mastoidectomy was done, and skin flaps were made from the posterior part of the wound. The meatus thus formed was packed.

7. Dual[20] describes a case in which both mastoids were opened and the cells cleaned out. Skin grafts were used in the wounds to form the meatus, but without result as the wounds were closed, with no improvement in hearing.

8. Beren's[21] case. This case, operated by Beren, was described by Dual. A radical mastoid operation was done on each side, then the cavity was dermatized with flaps.

9. Page.[7] The mastoid cavity was opened, and the cells cleaned out down to the tympanum. An opening was made in the auricle, then the mastoid incision was closed. Ten days later a skin graft in the mastoid wound, through the artificial meatus, was made.

Reports of cases:

1. Alexander's case:[9] Reported by Page.[7]

This was a case of a boy eleven years of age, with a normal left ear and congenital microtia with total bony atresia in the right. Operation was performed for mastoiditis.

He found the absence of a bony canal, pus in the mastoid cells and ossicles present. The drumhead was absent, a bony plate being in its place.

The operation was completed by tucking in skin flaps from the posterior part of the wound. The meatus thus formed was packed. Eight months after the operation, the meatus was 4 mm. wide.

As a result, he gives an improvement in hearing, from 1 meter through a tube before operation, to 4 or 5 meters after operation.

2. Blumenthal's case:[22] Mention was made of two cases in which results of operation were very unsatisfactory. This writer argues against operation, saying that one should keep what hearing was already present.

3. Dual's case:[20] This case was a girl twelve years of age, with a bilateral total osseous occlusion of the ear canals.

Both mastoids were operated, then skin-grafts were applied in the wounds. The wounds failed to keep open and there was no improvement in hearing.

4. Dahmer's case:[23] In this instance the patient was three years old and had a bilateral osseous atresia.

Operation was performed on each side a bony canal being made to the tympanum. Drumheads were not present. The stapes was present on each side.

The author reports that the hearing was much improved.

5. Morris' case:[24] This was a case of a boy ten years of age, with a bilateral bony atresia. The patient could hear loud voice. The mastoids were opened. The author does not give results nor describe operation.

6. Braun's case:[7] Page reports this case, saying it was unpublished at the time of his work.

The findings at operation were that the jaw encroached on the line of the canal, annulus was present, but no drumhead was found. Ossicles were found in a practically normal tympanum.

The author gives as a result a marked improvement in hearing.

7. Cheatles' case:[25] This author reports a case of congenital malformation of the auricle and meatus, with unilateral osseous atresia. There was a fairly well-formed auricle without a meatus opening. Some hearing was present and vestibular reactions were positive. The x-ray picture showed mastoid cells and middle ear tract. The jaw appeared to articulate with the posterior meatal wall.

At the time of the operation no mastoid cells and no tympanic plate was found. After finding no meatus, the operator stopped.

8. Beren's case:[7] This case was reported by Page, who said that up to the time of his work it had not been reported.

The patient was five years of age. He had a bilateral osseous atresia of the ear canals. Both sides showed articulation of the jaw with the anterior wall of the mastoid.

A radical mastoid operation was done on each side. No drumheads were found. On one side a rudimentary malleus and incus were found; on the other, a rudimentary malleus, while the stapes was present on each side.

The mastoid cavity was dermatized with skin flaps.

A good result was reported.

9. Hershel's case:[17] In 1909 this writer reports a case of congenital atresia of the auditory meatus in which the auricle was normally developed.

The patient, an old lady, was the offspring of blood-relations. The hearing was 10 cm. for whispered voice.

The meatus was found occluded by a plate of bone. The Eustachian tube was found to be patent.

On post-mortem (no operation was performed) no drum membrane was present.

10. Page's case:[7] The patient was two years of age, with a bilateral osseous atresia.

One ear was operated at this time. The mastoid was opened (mucopurulent material found). The antrum was located, small aditus and contracted middle ear were exposed.

There was no fibrous canal, drumhead or annulus found, likewise no ossicles. The Eustachian tube was open.

An opening was made in the auricle, then the posterior incision was closed. After ten days' time, a skin graft was done. Caloric test was positive.

Two years later the meatus was 5 mm. in diameter, the cavity was clean and the hearing was improved.

Later the other ear was operated. No meatus or bony canal was found, likewise no ossicles. An indefinite drumhead and poorly-formed malleus were present, while the incus was quite well-formed. The stapes was present, as was afterwards demonstrated.

An artificial meatus was formed, then Thiersch grafts were applied ten days later.

Caloric test was positive.

Three years after the first operation, the mother of the patient says child can hear natural tone of voice.

After a study of his case and those reported in the literature. Page[7] makes the following conclusions:

1. Operation is warranted in practically every case of bilateral congenital microtia with total osseous atresia which occurs in an otherwise well-formed infant.

2. After a child with this deformity has reached two years of age, x-rays should be taken, then the mastoid opened. If a drumhead is not found, the contents of the tympanum, with the exception of the stapes, should be removed.

3. Injury to the jaw can be avoided by keeping well posteriorly.

4. It is best to allow a large cavity, then line it with skin grafts.

5. The operation should be done early, to allow the development of speech.

Author's case: Patient, L. McC. Male. Age 15. White.

The patient came to the University Hospital, June 21, 1916, complaining of poor hearing.

The patient's hearing had been poor since birth. When two years of age he began learning to talk.

The patient says his hearing has been failing more rapidly during the past year. There is some tinnitus at times. He says he hears best when on a train or anywhere where there are loud noises. There has been some dizziness at times, never marked. At one time such a dizzy spell was associated with staggering and vomiting. This was about six years ago.

The patient is in the seventh grade; has always seemed quite backward. Parents think he does not talk as plainly as he should.

The child was born at full-term, after a normal labor. He is the third child in a family of nine. There are no other deformities in the family. There are no children dead. There is no history of miscarriages. No history of consanguinity can be obtained. Patient has had measles and mumps; has not had scarlet fever or diphtheria.

Examination—Ears: Right Ear. Auricle appears normal in size and position. Where the external meatus should be is a concavity 3 mm. deep. Probing shows it to be bone covered with skin.

Hearing with alarm, forced. Whispered voice, three inches. Spoken voice, five feet.

Hearing without alarm. Same.

Rinne. Negative. Bone conduction slightly less than normal. Air conductions much cut down.

Weber's test. Localizes to the left.

Low notes are markedly cut down. Hears C 1 fork only at marked intensity.

High notes are cut down, but are heard better than lower ones. Hears C 4 fork at high intensity.

Left ear: The left ear is similar to the right, except that the external auditory canal extends inward about one-half cm. Probe again comes against epidermis, covering over what is apparently solid bone.

Hearing with alarm. Forced whispered voice, two inches. Spoken voice, three feet.

Vestibular test.

1. Rotation test. Patient was rotated from left to right ten turns in twenty seconds. Nystagmus, almost wholly horizontal in type was present on looking to the left, and lasted thirty-five seconds.

After rotating from right to left, nystagmus was present on looking to the right for forty seconds. Patient became quite nauseated and vomited profusely ten minutes after completion of the rotation tests.

2. Caloric test. Water at 68 degrees was applied to each remnant of ear canal for six minutes. No nystagmus, vertigo or nausea resulted. Ice water was applied in the same way for six minutes. No nystagmus, vertigo or nausea resulted.

Nasopharynx. Orifice of each Eustachian tube appeared smaller than normal, but appeared to be patent. The tissues surrounding the orifice appeared to be atrophied.

Wassermann on blood is negative.

X-rays of mastoids. Mastoid cells on both sides apparently normal.

An area is made out in each plate, which is apparently tympanic cavity.

On June 26, 1916, the left ear was operated upon with the hope of establishing a meatus, the supposition being that the perceiving apparatus was intact and functionating.

Operation. The left mastoid was opened and a simple mastoidectomy was done in the usual manner. Cells seemed to be normal. The antrum of the mastoid was found, aditus was approached and enlarged until the incus was well exposed. The incus appeared normal and movable.

Taking the floor of the aditus as a guide for the facial, the bone external to the tympanic cavity was attacked. Solid bone about one-third the thickness of a normal canal, was found between the mastoid cells and glenoid fossa. This was removed, with the burr working outwards to the concave area representing the external

meatus. No annulus could be detected. Just external to the proper position for the annulus, a small cavity 3 mm. in diameter, was found. This communicated with the tympanic cavity by means of a very small opening into which a mastoid seeker fitted tightly. No evidence of a drum head was to be seen. A seeker introduced from without into this aperture caused a movement of the incus. The external wall of the tympanum was so constricted in the antero-posterior direction that it was not considered advisable to attempt the enlargement of this opening. The solid bone was removed externally to the concave depression in the concha. A large opening was made in the concha. The mastoid cavity was lined with Thiersch grafts, and the wound closed posteriorly. The grafts were held with the usual cotton pledgets, dipped in aristole powder, the last of the packing being done through the opening in the concha.

This operation resembled a meato-mastoid operation with primary skin-graft.

On the third day following the operation, the cotton pledgets were removed. There was practically no odor, graft seemed to be holding perfectly. There was no pus and a very small amount of discharge. A light iodosal drain was put in the wound very loosely.

Facial, all right.

July 1, 1916. Graft holding very well. Practically no odor. Dressing just moistened with discharge. Hearing without alarm, whispered voice, twelve feet; spoken voice, forty-five feet.

July 6, 1916. Graft has held best in the region of the aditus. There has been a small amount of discharge each day. Apparently no pus.

July 16, 1916. Most of the superficial epidermis of the graft has sloughed. Holding well in the region of the aditus, slight bulging posteriorly. Pack of loose gauze saturated with discharge. No bad odor. Hearing with alarm, whispered voice, three feet; spoken voice, nine feet. Hearing without alarm, whispered voice, ten feet; spoken voice, forty feet.

July 21, 1916. Graft continues to look fine. There is quite a free discharge. The hearing is the same as on July 16, 1916.

August 10, 1916. The wound is covered with healthy looking epidermis, except in one small area posteriorly. The hearing is the same as on July 16, 1916.

August 26, 1916. The wound has been gradually healing and the discharge has almost ceased. There is a smooth epidermal layer over the region of the aditus. Hearing with alarm, whispered

voice, three feet; spoken voice, ten feet. Hearing without alarm, whispered voice, twelve feet; spoken voice, forty-eight feet.

The canal is about 1 cm. in diameter at the smallest place.

Spetember 3, 1916. The right ear was operated. A simple mastoidectomy was performed. All of the cells were removed. The antrum was entered, and the aditus exposed. The horizontal semicircular canal and long process of the incus were exposed. The incus was movable, but was not nearly so free as it should be. It seemed somewhat deformed and fixed at the lower joint.

No trace of any cavity external to the position of the annulus on this side was discovered. A thick wall of bone between the mastoid cells and the glenoid fossa was reamed out, using the burr. The soft tissues of the fossa were accidently exposed. From this there was no disturbance in the temporomandibular articulation at any time. No annulus or drumhead was seen. The bone external to the tympanum was not removed.

The lateral sinus and dura in the middle fossa were exposed and so primary skin-grafting was not attempted.

Just internal to the concave depression representing to us the position of the external auditory meatus was a little cartilage. This did not penetrate the bone, but fused with the tissues of the glenoid fossa.

An opening was made in the concha, the posterior wound closed, and the mastoid packed through the opening in the concha.

The facial was all right after the patient regained consciousness.

September 7, 1916. The dressings were removed. Hearing with alarm, right ear, whispered voice, two feet; spoken voice, eight feet. Hearing without alarm, left ear, whispered voice, fifteen feet; spoken voice, forty-eight feet.

September 15, 1916. The wound is granulating nicely. Hearing with alarm, right ear, whispered voice, two and one-half feet; spoken voice, nine feet. Hearing without alarm, left ear, whispered voice, eighteen feet; spoken voice, fifty-four feet.

September 20, 1916. The wound on the right side is still open posteriorly. This is being packed daily.

A light pack is placed in the left ear each day. A small area near the external meatus has not epidermized as yet.

September 22, 1916. The wound on the right side was grafted to-day. The original mastoid incision was opened throughout its extent again, exuberant granulations were curetted, Thiersch graft from the leg was placed in the wound, covering over smoothly the region of the aditus. The wound was closed posteriorly and cotton

pledgets packed in through the meatus to hold the graft in position. The facial was all right after the patient regained consciousness.

September 26, 1916. The cotton pledgets were removed. The graft appears clean and white. A plain linen pack was put in loosely. No bad odor. There is quite a free discharge.

October 1, 1916. The dressings in each ear are being changed daily. The graft in the right ear is holding very well. There is a small amount of discharge on the pack each day.

The meatus in each ear is about 1 cm. in diameter.

October 5, 1916. On this date the left ear, which was operated first, presents a meatal opening of from 8 to 10 mm. in diameter. The canal from the meatus down to the region of the aditus is considerably larger in diameter and covered with healthy looking epidermis, except for one small area posteriorly. The graft in the right ear is holding very well. There is less discharge each day and the meatus is about 10 mm. in diameter.

A review of the literature has brought out no case with such improvement in hearing and satisfactory meatal opening and canal as has this case. The case reported by Page is the best result so far reported and the improvement in this instance in the hearing was not accurately determined so that no definite statement could be made.

The findings on February 1, 1917: Seven months after the operation on the left mastoid the hearing in the left ear was, whispered voice, forty feet, without alarm. The right ear was not tested because of an acute middle ear otitis which was present at this time. A few days before the membrane covering the aditus bulged and ruptured. Now there is a suppurative discharge from its perforation.

Examination of the left ear: The external meatus is 1 cm. in diameter. The mastoid cavity is completely covered with white, dry skin. There is nothing that looks like an external canal. At the bottom of this cavity the aditus cannot be seen. The site of the aditus is a perfectly smooth, concave wall. The small space external to the annulus mentioned in the early description has been filled in and disappeared. The external wall of the tympanum cannot be seen as such. The aditus is closed over by what seems to be a tough fibrous membrane, which is undoubtedly acting as a tympanic membrane.

Examination of the right ear: Four weeks ago this ear was seen. At that time the interior of the ear was the same as the left. The hearing in the right ear was not so good as the left.

A peculiar thing in connection with this case in testing the hearing has always been the way in which the hearing was cut down by using the alarm apparatus. This has always interfered with the testing of the exact amount of hearing in the poor ear.

About two weeks ago the patient complained of an earache in the right ear. On examination this fibrous membrane and skin covering the aditus in the right ear was found to be bulging. The next day the bulging skin ruptured, and up to the time of examination, February 2, there has been a suppurative discharge from the tympanum. The membrane covering it is perforated and looks very much like a perforated normal tympanum.

Our expectation is that with treatment of the suppurative middle ear otitis this membrane covering the aditus will heal the same as the tympanic membrane does.

At this time the discharge from the right ear has ceased and the membrane covering the aditus has healed in a manner similar to the healing of a perforated drumhead.

BIBLIOGRAPHY.

1. Bezold and Siebenmann: "Textbook of Otology," 1908.
2. Forsyth: Trans. Am. Acad. of Ophthal., Otol. and Laryngol., 1909.
3. Francis, T. E.: *Brit. Med. Jour.*, No. 11, p. 545, 1910.
4. Pomeroy: "Diseases of the Ear," 1886
5. Politzer: Edited by Sir. Wm. Dalby, 1894.
6. Joel, Eugen: *Archives of Otology*, Vol. XIII, p. 237; quoted by Bezold and Siebenmann.[1]
7. Page, J. Randolph: 1914.
8. Cassels: *Glasgow Med. Jour.*, No. 8, p. 125, 1876.
9. Alexander: *Zeitschrift fur Ohrenheilkunde*, No. 55, p. 144, 1908. Quoted by Page.[7]
10. Kopetzky: "Surgery of the Ear," 1908.
11. Dench: "Diseases of the Ear," 1900.
12. Hovell, T. Mark: "Diseases of the Ear," 1894.
13. Phillips, W. A.: *Jour. Ophthal., Otol. and Laryngol., N. Y.*:, No: 3, pp. 145-147, 1891.
14. Beck, J. C.: Quoted by Phillips, W. A. in above reference.
15. Ballenger: Quoted by Phillips, W. A., in same reference.
16. Andrews: Quoted by Phillips, W. A., in same reference.
17. Hershel, K.: *Monats. fur Ohrenheilkunde*, Vol. 3, p. 43.
18. Bishop: *Jour. A. M. A.*, Vol. 15, p. 430, 1890.
19. Milligan: Dicussion of Cheatle's case. Royal Soc. Med. Prac., 4 Oto. Sec., 25, 1910-11.
20. Dual: Quoted by Page.[7]
21. Beren: Quoted by Page.[7]
22. Blumenthal: *Zeitschr. fur Ohrenheilk*, No. 59, p. 368, 1909. Reported by Page.[7]
23. Dahmer: *Klin. Therap. Wochenschrift*, No. 17, pp. 1, 312, 1910.
24. Norris: *Texas State Jour. Med.*, No. 7, p. 14, 1911-12. Quoted by Page.[7]
25. Cheatle, A. H.: Royal Soc. Med. Proc. 4, Otol. Sec., 25, 1910-11.

State University of Iowa, College of Medicine.

ON LUNG ABSCESS AS A SEQUEL TO TONSILLECTOMY.*

DR. IRA FRANK, Chicago.

The consideration of those elements which add hazard to our daily routine, any analysis of the dangers through which our patients are lead in even very ordinary procedures, is always importantly *apropos.* The necessity of such consideration is not lessened by the comparative rarity of any type of complications or sequellae: the very nature of our calling demands a constant attention to all details which tend, however rarely or remotely, to prevent catastrophes in any branches of our field. The inability of preventive medicine to cope with more than a relatively few problems of our time strongly emphasizes the surgeon's responsibility in the prevention, when it is in his power, of what may prove to be serious or even fatal complications following operative work.

I shall refer in this communication to the occurrence of lung abscess following the removal of tonsils, two instances of which were recently brought to my attention. These two cases are admirable, though pitiful, examples of what can be produced and what can probably be averted in the routine technique of tonsillectomy. The months of pain and utter misery, the constant shadow of impending death, the evolution of living skin-covered skeletons from healthy and normal individuals as shown in both cases,—these concepts are indelibly written in my memory and are responsible for my present effort to provoke discussion.

The possibility of such terrifying sequellae to the most popular of modern surgical operations is certainly worthy of profound thought, and when one considers the anatomy involved, the nature of the operation and the stupendous number of operations performed day after day by specialists, surgeons, general practitioners, and students, it would seem that it is only by the grace of God that grave complications follow tonsil operations as infrequently as they do.

We are indeed most fortunate in this infrequency, and that many of us escape familiarity with it. There are many men performing large numbers of tonsillectomies year after year who have never

*Read before the Southern Section of the American Laryngological, Rhinological and Otological Society, March 24th, 1917, in Memphis, Tenn.

seen a case thus complicated, and there are very few of them reported in the literature,—yet a study of the composite experience of a large group of men reveals facts of sufficient importance to awaken sincere interest in anyone performing the operation.

Bassim, in France, reported in 1913, nineteen cases of broncho-pulmonary complications following tonsillectomies, of which two were lung abscesses. In sixteen cases reported by Scudder during a period of eight years at the Massachusetts General Hospital, one followed a septum resection, and, to use the writer's own words, "several followed tonsillectomies." Yankauer has mentioned four cases in his experience. The report of Manges, recently published, emphasizes keenly the possible frequence of this much-to-be-dreaded complication: there are nine cases in his series, six of which occurred in a period of six months at Mt. Sinai Hospital. The x-ray department of this institution reports that 20 per cent of all lung abscesses examined by them are post-tonsillectomy in origin.

A search through the records of the Michael Reese Hospital Library covering a period of ten years shows that in this time thirty-seven diagnoses of lung abscess were made, three of which appeared a short time after tonsil operations under general anesthesia. Two of these three cases were in the hospital at the same time, and I was fortunate to have the privileges of a consultant in both. The third case occurred some time ago, and I am indebted to my colleagues at the hospital for permission to mention it.

A marked similarity will be noted in the following histories, which is fairly typical of all the reported cases:

Case 1: S. S., a Russian male, twenty-two years of age, was admitted, complaining of chest pains, cough, profuse foetid sputum, and a marked progressive loss in weight and strength. The onset of his trouble, he stated, occurred five days after the removal of his tonsils under ether anesthesia, six weeks previous to his admission. He had been very miserable after the operation, and bled intermittently for twenty-four hours. His discomfort culminated on the fifth day with the symptoms of his present complaint. He described the pain as dull, pulling, in character, over the left chest and back of the left shoulder. The pain at times was very severe, and was relieved when at its worst by paroxysms of coughing which produced large quantities of thick, greenish-yellow pus. The sputum was occasionally blood tinged, and at all times had an extremely offensive odor. His personal and family history were negative as far as points bearing on his present complaint were concerned.

He entered the hospital with a temperature of 105, pulse 132, respirations 28, and appeared seriously ill. On examination of the fauces, the scars of a recent tonsillectomy were apparent. There was a large piece of tonsil tissue high on the left posterior pillar. Both anterior pillars were amputated, and the uvula hung on the right side of the midline. Chest examination showed dullness and large moist râles posteriorly on the left chest in an area extending from the third to the seventh ribs, and from a line drawn through the center of the scapula to the paravertebral line. X-rays, by plate and flouroscopic methods, revealed a shadow, oval in outline, corresponding to this area of dullness.

The abscess was opened and drained, following which the patient made a protracted, but uneventful recovery.

Case 2: H. P., a Russian male, married, twenty-seven years of age, was admitted, complaining of continuous and at times excruciating pain in the right chest, together with chills, fever, night-sweats, and spells of intense coughing, with the production of large quantities of thick, greenish, foul-smelling sputum. He stated that fourteen days previous his tonsils had been removed under a general anesthetic. Nine days following the operation, during which time he suffered with malaise, a slight cough, and a gradually increasing pain in the right chest, he was suddenly attacked with a paroxysm of coughing and gagging, and expectorated an immense quantity of thick, green sputum. Two days later a similar attack occurred. He said he had experienced chills every night for a week, following which his temperature frequently reached 104. In this condition he presented himself at the hospital.

Under examination the pillars of the fauces showed irregular scars of the recent operation, covering masses of tonsillar tissue on both sides. Both pillars had been torn and partly removed. The left lung was negative. Expansion was impaired on the right side, and diminution of resonance with reduced tactile fremitus and breath sounds, was noted in the right inter-scapular region. There was dullness over the lower right lobe posteriorly, with many moist rales in this area. Here the tactile fremitus was diminished and the vocal fremitus increased. Between the two areas of dullness was a belt of hyper-resonance with increased tactile fremitus and numerous small, moist rales. By flouroscopic x-ray examination an abscess was located casting a large and definite shadow in the right lower lobe.

The patient remained in the hospital for four weeks, during which time he ran a constant temperature varying between 102 and 104.6,

with frequent attacks of coughing, producing large amounts of fetid sputum. He was treated medically during this time, and when it was found advisable to secure surgical intervention, the patient left the institution to be operated on by the surgeon of his choice. The abscess was subsequently opened and drained, and he is now spending the greater part of a year in the South, in an effort to regain his former strength and health.

Case 3: D. B., a Polish male, single, twenty-three years of age, was admitted to the hospital complaining of sharp spasmodic pain in the right chest, a severe cough with intensely malodorous sputum, and a variable fever with frequent chilly sensations. He stated that three weeks previous his tonsils had been removed under ether anesthesia, after which he had been confined to bed because of a continuous though moderate hemorrhage. He began to cough eight days after the operation, and within twenty-four hours began producing, at intervals, large quantities of fetid sputum, which relieved to a great extent much of his pain.

He entered with a temperature of 101.4, pulse 120, and respiration 24. Examination of the mouth showed complete removal of the tonsils, and a very apparent amputation of the left pillar, with the uvula retracted to the right side. The chest findings disclosed an area of impaired resonance over the lower right lobe posteriorly, without bronchial breathing or increased tactile fremitus, especially marked at the costal angle. Flouroscopic and stereoscopic x-ray views located an abscess at the level of the cardio-phrenic angle in the lower lobe extending from the fifth to the eighth rib.

With rest and symptomatic treatment the temperature, which reached 103 in the first twenty-four hours, gradually subsided together with the cough and sputum production, and the patient was discharged after five weeks, to begin a long and tedious convalescence.

The histories here presented are given merely to show the marked similarity between them, which is typical also of the cases reported in the literature. They are useless in any determination of the etiology of the complication, since the details of technique and accident cannot be secured from the patient. It was, however, not difficult to determine in two of the above cases that tonsillectomy had been crudely performed and that in consequence of the destruction of faucial tissue there was doubtless aspiration of blood flowing from the injured muscle tissue during narcosis.

The number of cases reported in the literature being remarkably small, considering the possibilities of such an occurrence in the hands of even the best operators, I determined some time ago to find out by personal investigation, if the number of cases published was a correct gauge of the number of such cases actually occurring in the practice of, or coming to the attention of, my colleagues. Realizing that most cases of tonsillectomy are lost track of by the operating laryngologist in routine hospital service, I included in my investigation some internists and surgeons, in whose wards such cases are likely to be found when the patient returns to the hospital with lung symptoms. I therefore addressed a circular letter to fifty internists, surgeons, and laryngologists, selected at random throughout the country. I was in this way informed of at least fifteen additional cases, with hints of many more. These additional cases, informally reported, serve to indicate that more instances of lung abscess complicating tonsillectomy occure than we perhaps individually imagine.

A. S. Warthin, pathologist at the University of Michigan, writes, for example, of *three* autopsy cases on *students* "in which metastatic abscesses of the lungs, and (secondarily) of liver, followed tonsillectomy." He is uncertain as to the anesthetic used, but believes they were all local. He considers them to be examples of metastic infection: post-operative pyemias. The lesions in all three cases, and in a *fourth* student, who very narrowly escaped the autopsy table, were situated in the right lower lobe.

Jacob Geiger, of St. Joseph, Mo., has seen two cases in his experience, neither of which was fatal. One case occurred after local anesthesia, and showed an irregularly scarred operative field. The lesions were both on the right side, one in the upper lobe and one in the lower. Dr. Geiger believes the upper lobe infection to be due to sepsis, and the lower to aspiration.

Lung abscess in a child of one year and nine months, following operation under ether, is reported by Dr. N. L. Wilson, of Elizabeth, N. J., who writes that symptoms began on the third day, with a lesion located in the left lower lobe. The patient made a slow recovery without operation. Dr. Wilson attributes the complication to aspiration.

Dr. James B. Herrick has acted as consultant in a case of lung abscess in a patient thirty-seven years of age, following removal of the tonsils under general anesthetic. The lesion was located in the right lower lobe. Symptoms began on the fifth day. Dr. Herrick

suggests that the lesion was embolic in origin but adds that he cannot be certain.

Dr. Henry Christian, writing from the Peter Brent Brigham Hospital, in Boston, reports two cases of lung abscess, both in women, fifteen and twenty-five years of age. They were both operated in outpatient clinics, and it is not known whether general anesthesia was used, though this is highly probable, especially in the younger case. Symptoms were apparent early, and the coughing began on the fifth and seventh days. Of these cases one had a focus in the left upper lobe and the other in the right lower.

During the past year Dr. Frank Billings has seen three patients suffering with lung abscess following tonsillectomies done under ether. All the patients were adults between the ages of twenty-five and thirty-five years. The symptoms in the three cases began practically at once and the lesions were located low on the right side of the chest. The cases were treated surgically and all recovered. Dr. Billings asserts that without doubt these cases were aspiratory.

From the Manhattan Eye, Ear and Throat Hospital clinics, Dr. T. A. McKenty writes: "Cases have been reported which have been done in our hospital. In hospitals such as ours, where from twenty to thirty cases are operated daily, the work is rapid and not sufficient time is taken to control bleeding before the patient is sent back to bed. Aspiration accounts, I believe for the majority of these cases."

Dr. Samuel Robinson, in charge of thoracic surgery at the Mayo Clinic, has seen one case of lung abscess following a tonsillectomy done elsewhere, and is corresponding with two physicians regarding two other cases, neither of which he has as yet seen. The one case operated was thirty years of age, with an abscess in the right upper lobe, symptoms of which began about the second day.

Dr. Manges has had a tenth case added to his series since the publication of his paper in March of last year: an adult of thirty-five years, with symptoms beginning on the tenth day. The abscess was single and located in the right lower lobe.

The mechanism by which pulmonary abscess is produced during or following tonsillectomy is readily apparent. The process is either the result of the aspiration of blood or infected material, or of septic embolism. There are, according to the replies to my circulars, adherents to both theories. Earnest study of the cases brought to my attention, however, convince me that it is impossible to dogmatically state that all lung abscesses are caused by one or the

other process. Manges suggests five possible exciting causes: (1) Anesthesia; (2) aspiration; (3) embolism; (4) special infective agents; (5) local or general antecedent causes (*i. e.*, tuberculosis, diabetes). He lays particular stress on aspiration.

I have personally come to believe that these abscesses may be said to result from post-operative pneumonias of lobar, bronchial, or focal type, which result directly from the anesthetic, from aspiration, or from pulmonary embolism.

Anesthesia, *per se*, may be dismissed with but a word. General anesthetics used in surgery for operations on the body remote from the nose and throat fields practically never produce lung complications more serious than pneumonia.

There are many considerations which make it probable that post-tonsillectomy lung abscesses are directly the result of aspiration. In the first place, let us consider the location of the complicating lesion. A definite majority of reported cases show the abscess to be single, and to be located in the right lung. Most of these, too, are found to be situated in the middle and lower lobes. This naturally supports the aspiration theory, since the offending material would appear to localize in the same positions in the bronchi as foreign bodies of any type. In the second place, the ease of aspiration, during the average tonsil operation under ether, of pyogenic and saprophytic organisms expressed from the crypts of diseased tonsils, together with the mess of blood and secretions which is too frequently permitted by the rapid or careless operator, cannot be denied. Thirdly, the fact that the lesions are usually single, favors aspiration, since embolism would lead us to expect more or less showers of infected material to attack numerous portions of the lungs and other organs of the body. Fourth, a curious fact, well authenticated by the cases at hand, is that such cases rarely occur in private practice. In other words, the degree of care which is given to private patients over that given the patients in the wards of the dispensaries and free clinics is as a rule sufficient to give the former protection against this grave complication. Manges is emphatic on this point: "Abscesses of the lungs should never occur if the patient has been properly treated." He refers to the practice of operating twenty or thirty cases in a period of two or three hours, with frequent injury to tissue and consequent hemorrhage, with little care of asepsis, and absolute neglect of the blood-filled mouth of the unconscious patient. The final bit of evidence in favor of the aspiration theory is the number of analagous conditions

which certainly cause lung abscess in this way. Cohn's case of lung abscess following the opening of a tonsillar abscess is an example. A case of abscess following the extraction of a tooth, reported by Davies, and a similar case reported by King will also serve.

On the other hand, it is impossible to deny the embolic origin of some of the cases, or at least to deny the possibility of such a mechanism. Brief consideration of the vascular anatomy of the field, and a realization that every tonsillectomy is what may be called, from a surgical point of view, an unclean case, should make us wonder why serious hematogenous complications are so infrequent.

Metastatic pulmonary infection must, when it occurs, follow certain well-defined and easily traced routes. The plexus tonsillaris and plexus pharyngeus,—complicated venous networks, cover the outer walls of the pharynx and tonsil cavities, and receive blood returning from the tonsils, pillars, and lateral pharyngeal walls. These vessels are exposed and always more or less injured in even the gentlest operative work, and this, too, in a field which it is impossible to keep entirely free from germ-carrying saliva and pus.

An infected embolus dislodging from a thrombus in the pharyngeal plexus, is carried through the variable pharyngeal veins into the internal jugular, and through the right heart into the pulmonary system. Here we assume that infection of lung tissue results, either by direct contiguity or infarction, and the usual pathological sequence of abscess formation begins.

Doubtless some lung abscesses must be produced in this way. There are cases known to most of us, and recorded in the literature, of any number of metastatic infections following tonsillectomy, such as mediastinal abscess, endocarditis, brain abscess, purulent joint foci, etc., many of which can be seen at a glance to be hematogenous, and not lymphatic in distribution. Why not then, may embolism be the cause of many lung abscesses, since the blood stream returning from the tonsil site passes through the lungs before visiting again the peripheral vessels?

The diagnosis of aspiration and metastatic infection as the cause of the reported cases, has not, so far as I have been able to find, been differentiated. There is of course little to be said on this subject as the whole matter rests on uncertain theory, but I venture to make a suggestion. It was quite evident to me in studying the material collected for this exposition, that the cases at hand readily

divided themselves into two groups when considered from the standpoint of the day of onset of the symptoms. In a great majority of the cases untoward signs and symptoms were noted in the first thirty-six hours. The remaining smaller groups showed, so far as the histories are obtainable, more or less freedom from trouble for periods varying from four days to two weeks. It is not illogical to assume, basing our assumption on well-known facts regarding the period of time required for the pathological processes involved, that the majority of early cases may be due to aspiration, and that the later cases result from septic emboli.

It is quite evident in reading replies to my circular letters, that many operators are aware of the dangers of this complication, and have taken steps to eliminate the danger in routine technique. Thus, Seymour Oppenheimer says: "My idea is that it is entirely a question of the operator and his methods, the posture of the patient, and the anesthetic. Anesthesia, in my opinion, in these cases should never be given by any other than a trained assistant who employs a suction apparatus to keep the throat free of blood and secretions. I doubt very much the embolic nature of the lesions."

Similarly, Albert Ochsner writes: "I believe that the reason we do not have lung abscesses following tonsillectomy is due to the fact that we practically never operate under general anesthesia. . . . We never permit our patients to lie on their backs after operation, so as to make the aspiration of blood and mucus difficult."

L. W. Dean explains his freedom from the complication as possibly due to the fact that all his patients taking general anesthetics are "operated on their sides, with the mouth lower than the pharynx, and the buccal cavity lower than the larynx." All adults are operated under local anesthesia in Dr. Dean's clinic.

Dr. Manges believes that the number of lung complications would be materially diminished if the tonsil crypts were emptied of their plugs before operation.

Dr. Robert Levy's practice is to have the patient as nearly horizontal on the table as possible. He uses suction, the assistant sponges thoroughly, and the moment there is any indication of blood in the laryngo-pharynx, the patient's head is lowered.

At the laryngological clinic of the University of Minnesota Medical School, Dr. F. C. Todd uses "the cleft-palate or so-called Rose position for tonsillectomies under narcosis. In this position the head is over the edge of the table, and the blood runs out of the nose and from the roof of the mouth. The patient is not allowed in a level position until his reflexes are restored."

Dr. J. C. Beck believes that the cases reported in the literature are overdrawn and exaggerated, but nevertheless adds that abscess may be prevented by the use of the suction apparatus and the immediate stoppage of all bleeding points during the operation.

The conclusions to be drawn from the experience of many are more to be valued than those of an individual, and so, in closing, I take the liberty of presenting composite deductions from the cases of others as well as my own. This is especially necessary in an exposition of the subject we have discussed, since the relative rarity of the lesion would otherwise detract from its importance.

These deductions, briefly stated, follow:

Lung abscess may complicate tonsillectomy. The occurrence of this lesion is rare, but it is an ever-present menace to the surgeon, with results so harrowing that every effort must be made to insure, if possible, its prevention.

The great majority of the cases occur after operations done under general anesthetics, in young adults of twenty to thirty-five years.

In the three cases reported by me, examination of the fauces revealed incomplete or destructive operative results. Two of the cases give distinct history of post-operative bleeding.

The majority of the lesions are aspiratory in origin, as evidenced by the location, the ease of aspiration, the occurrence of single abscesses in practically every case, the predominance of the complications in the free clinics and charity hospitals, and, finally, the number of analagous conditions which can cause lung abscess in no other way.

Lung abscesses are the result of pneumonia of lobar, bronchial, or focal type, induced by either the anesthetic, aspiration, or septic embolism. The greater number are doubtless due to the second factor and are therefore largely preventable.

It is apparent that a more general use of local anesthesia for tonsil surgery, with the abolishment of the rapid, tissue-destroying operative methods, and a respectful attitude toward hemorrhage and the secretions of the operative field will do much to relieve the surgeon of serious liability.

104 S. Michigan Ave.

EXTENSIVE CARCINOMATOUS INVOLVEMENT OF THE ACCESSORY SINUSES OF THE NOSE WITH INTRACRANIAL INVASION. CURED FIVE YEARS.

DR. MARGARET A. WARLOW, Philadelphia, Pa.

The following case is of interest because of the apparent hopeless condition of the patient at the time of operation.

Mrs. K., age 59 years, presented herself at my office in November, 1910, complaining of pain in the right side of the face, head, neck and in the right eye. The pain was very severe, being worse at night.

On examination, I found tenderness on pressure over the right maxillary sinus. The right nasal fossa was obstructed by a large inferior turbinal, and a firm mass filled the superior and middle meati. On contracting the tissues, the middle turbinal could not be outlined, and it occurred to me that there was some involvement, probably a gumma, of the antrum of Highmore, pressing the naso-antral wall inward.

Vision was apparently unimpaired. The teeth were in very poor condition.

I suggested to the patient that she go to the hospital for further investigation of the condition. I did not hear from her again until May 1, 1911, when I was called to the house to visit her. I found her very ill and practically insane with pain in the head, which was uninfluenced by large doses of morphin.

From her family I gathered the following history of the case from the time when I had seen her in November:

After leaving me, she had had seven teeth extracted without relief. The pain continued to grow worse and she was treated by her family physician for neuralgia for about three months. In February, 1911, she entered the Methodist Hospital, where she had an operation, evidently on the accessory sinuses. The surgeon in charge of the case informed the family that a second and more extensive operation was necessary, as she had cancer. As he could not promise a cure and said that the operation would be very disfiguring, they decided to take her home. She was again under the care of her family physician and her people were under the impression that she would live only a few months.

On examination, May 1, 1911, I found the following condition:

Tenderness over the right maxillary sinus; exophthalmos of the right eye and vision almost gone; eye sensitive to light; the left naris unobstructed. There was a large opening through the canine fossa into the maxillary sinus, the result of operative procedure. Pus was discharging freely through this opening into the mouth. The right inferior turbinal had been removed and all of the nasal chamber above was filled with a pinkish grumous mass of tissue.

The patient entered the Woman's Hospital, May 30, 1911, where she was seen by Dr. Margaret F. Butler in consultation with me. On transillumination, we found the right maxillary sinus darker than the left. A probe passed through the opening in the canine fossa easily entered the sphenoidal sinus to a distance beyond 13 cm. without meeting resistance. The direction was through the floor of the sella, and as we did not then have x-ray facilities at hand, we did not dare to probe further in that direction. We curetted a considerable mass of soft tissue from the ethmoidal region, but the bleeding was so great that we were compelled to desist from further interference.

The following is a report of the microscopical examination of the tissue, as found in the Woman's Hospital:

"A large amount of glandular tissue without malignant degeneration; connective tissue increase and thickening of vessel walls. Not malignant; may be simple hyperplasia of glandular tissue due to regeneration after an inflammatory process, or an absolute increase of glandular elements, i. e., adenoma."

We wrote to the Methodist Hospital for a report of the case. The reply was as follows:

"There was no history kept of Mrs. K.'s case; her diagnosis was carcinoma of right antrum of Highmore."

Dr. Miriam Butts' report of the examination of the eyes was:

"No vision in right eye; no reaction to light. Pupils are equal. Left pupil reacts to light and accommodation. Right eye shows a very marked projection of the vessels at the mascular region and below in the periphery of the retina. Right optic nerve does not look very different from the left, although it is rather paler. I believe the eye is blind, either from temporary pressure on the optic nerve posterior to the eye, or to post-neuritic atrophy of the optic nerve of recent date."

Blood examination: Hemoglobin, 65 per cent; red blood cells, 3,140,000; white blood cells, 21,400.

The mental condition grew worse, the patient becoming maniacal and suffering so intensely that it was necessary to keep her tied to the bed. Opiates and other hypnotics gave her no relief.

As the case seemed desperate, on June 20, 1911, under ether anesthesia, Dr. Butler ligated the common carotid artery and then made a thorough exenteration of the ethmoidal and sphenoidal sinuses. The growth had destroyed the roof of the sphenoidal sinus and invaded the cerebral cavity. The soft tissue was cleared away in this region.

It is to be regretted that x-ray studies were not made in this case, as we never knew exactly the extent of the intracranial involvement. As the patient was *in extremis* when she came to us, less study was done than should have been. Consultation with a neurologist would also have been an advantage.

After operation, the patient was immediately relieved of pain. The circulation in the carotid was restored within a week. Her temperature ranged from 96.8° to 99.8°; pulse, 96-108. Her raving ceased, and she left the hospital July 5 very much improved.

Microscopical report of the second scrapings showed malignant degeneration.

Present condition of patient: General health excellent. She has gained forty-five pounds. Right eye blind. Sinus in mouth is closed. Right naris is healthy, no obstruction, tissue firm, no tenderness on pressure. Occasional headache. She has not had severe pain since her last operation. She has delusions and thinks people are talking about her. She cannot remember, is irritable and her mental condition is poor, but she has been able to do her housework most of the time since her operation.

1831 Chestnut Street.

Epithelioma of the Nose Apparently Caused by Irritation from Tortoise Shell Spectacles. LUCIUS F. HERZ, *Medical Record*, March 3, 1917.

Patient, 56 years old, presented a growth on the right upper portion of his nose, one centimeter in diameter, of nine months' duration, corresponding to that portion of the nose where his spectacles rested. Growth excised and histological examination showed it to be epithelioma of the basal cell type. ED.

REPORT OF A CASE OF SAFETY-PIN IN THE ESOPHAGUS DISPLACED DURING ANESTHESIA AND LODGING IN THE POST-NASAL SPACE.

DR. A. SPENCER KAUFMAN, Philadelphia.

It takes very little imaginative power to think of the amount of damage that an operator would inflict in attempting to turn an open safety pin in the esophagus, but this is what apparently happened during expulsive efforts, with no more injury than a few scratches on the mucous membrane in the case I am about to relate.

I was called to see Miss W., aged 19, at the Samaritan Hospital. She had swallowed an open safety pin, which was located by x-ray about four and one-half inches down the esophagus.

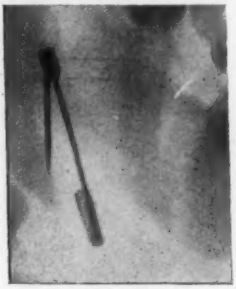

Fig. 1.

Fig. 2.

She was given ether, which caused some retching and vomiting, but not any more than is frequently seen in a person not prepared for anesthesia. The esophagoscope was introduced, but the only evidence of the pin was a few punctate hemorrhages in the mucous membrane corresponding to the location of the foreign body, as indicated by the radiograph. The esophagus was searched throughout its length without result, and the natural conclusion was that it had descended to the stomach, and the patient was returned to her room with orders to have her stomach x-rayed, as well as a re-examination of the esophagus. This was done the next morning, but no trace of the pin was found in either structure, so Dr. G. C. Bird, the skiagrapher, made an examination of the head, and it was due to this example of his thoroughness that the pin was found lodged in the post-nasal space, point

down. Acting under instructions from the family physician, who first got this report, Dr. Bird looked into the throat, and with

Fig. 3.

very little difficulty, grasped the pin with a pair of curved hemostats, and removed it.

I am indebted to Dr. J. L. Manasses for having seen this interesting case.

254 South Sixteenth Street.

REPORT OF A CASE OF MEMBRANOUS INFECTION OF THE NOSE AND ANTRUM, RESULTING FATALLY.

Dr. A. Spencer Kaufman, Philadelphia.

This case was seen in consultation with Dr. Broadfield, of Llenerch, Pa., December 26, 1914, from whom the following history was obtained:

H. W., white, male, 30 years old, had an attack of what seemed to be influenza about December 1, from the effects of which he was quite ill. About the middle of the month the patient had obstructed nasal breathing on the left side, due to a pseudomembrane filling up that nostril. Diphtheria was immediately thought of, and cultures made, with negative results. The membrane was very tough and would re-form in a short time after removal. A few days later, severe pain and edema developed over the left maxillary sinus, and it was at this time that I was asked to see him.

Transillumination showed complete density of the antrum affected, and under cocaine a trocar was introduced, but no fluid obtained, although for a day or two there was some relief.

The existing symptoms became more severe five days later and, in addition, his temperature became septic in type, and

there was some paralysis of the muscles of the left side of the face. An operation was decided upon.

The patient was removed to the Jefferson Hospital on December 31.

Dr. Manges gave the following x-ray report: Empyema of left maxillary sinus, and considerable thickening of left ethmoid.

Urinalysis showed albumen, some pus, many granular and a few leukocytic casts.

Operation under local anesthesia was refused, so he was given ether and the pre-turbinal opening into the antrum was made. The cavity was found to be completely filled with the same sort of pseudo-membrane that blocked the nostril. It was impossible to remove this debris through the nasal opening, so a counter opening was made through the canine fossa, which permitted a thorough cleaning of the antrum.

The tissue removed was sent to the laboratory, and the following report given: Histological examination showed necrotic tissue consisting of poorly stained masses of fibrin, cells and granular debris. The cells were composed of erthrocytes and polynuclear leukocytes. Cultures of pneumococci were obtained.

After operation there was considerable cellulitis of the face, lasting for several days.

The septic temperature, ranging from 97.3° to 101.1°, continued after operation, and myocarditis developed.

Sixteen days after operation, a swelling became pronounced on the left side of the neck. Fluctuation called for incision three days later, and a quantity of pus was evacuated. Vaccines, both stock and autogenous, were given without reaction or results, and the heart continued giving a great deal of trouble.

The patient became dissatisfied at the hospital and wished to be taken home, which was granted on the twenty-first day, he being taken out in the ambulance.

At home, his general condition remained about the same, and an abscess developed on the right side of the neck, which was opened on February 10, forty-one days after operation.

The facial paralysis did not clear up, and, in addition, the muscles of deglutition became involved, rendering swallowing impossible, and necessitating feeding through a tube.

Death occurred February 17, or forty-eight days after operation. Unfortunately, no necropsy was obtainable.

254 South Sixteenth Street.

THE REMOVAL OF TONSILS AS A PROPHYLACTIC MEASURE IN ALL CHILDREN OF FOUR YEARS OF AGE.*

DR. RICHARD W. PERRY, Seattle, Wash.

In advising the removal of every tonsil in children, as a prophylactic measure, I am aware that I am taking a somewhat advanced position, yet I feel that it is not that the facts of the case do not support my contention, but that the subject has been so befogged by misconception that it is very difficult to face it free from its mythical past.

When we discarded the ring tonsillotome for the more rational method of tonsil enucleation we failed, at the same time, to discard our mistaken ideas of tonsil life, history and function. I know of no subject where anatomists, physiologists, pathologists, and, I am sorry to say, laryngologists, seem to have so combined, without fact or reason, to dignify pathological tissue into an organ and to invent imaginary functions for the same. This phase of the subject, however, is showing rapid improvements.

What, then, is the tonsil? The tonsil is a lymphatic gland with a hair-lip. It is not unreasonable to assume that this gland, like all other lymphatic glands, was originally completely enclosed in its capsule and so protected by it from the many infections to which it now becomes the victim; that during the process of evolution the pillars of the fauces separated, and with them the capsule of the tonsil to which they were attached became split, and through this split an internal organ became exposed to external contamination.

The exposure of the gland with retention of its power of absorption, together with its profuse and intricate lymphatic connection with the heart, would strongly suggest a developmental defect. Nature, originally, made no such great mistake as this. It is the open door to disease, and, just as the inguinal canal is developmentally a weak spot in the wall of the abdominal cavity, so the tonsil is a breach in the defensive armor of the body. It is a series of culture tubes in an ideal thermostat—and investigation has proven it almost constantly septic. If a

*Read before the Pacific Coast Oto-Ophthalmological Society, San Francisco, June, 1915. Demonstrated before the Clinical Congress of Surgeons, Philadelphia, October, 1916.

city sewer is turned into the water main you have the same condition that the tonsil presents in respect to the body, and its effect is not less fatal.

The tonsil is an irritative hyperplasia of a lymphatic gland. The first result of the irritation is a swelling of the gland and the passing of some of the swollen tissue through the rent in the capsule and into the pharynx. The rent in the capsule may be too small to permit the presenting of much tissue through it, so the tonsil is forced to enlarge outward and form what is called the sunken tonsil. So that we have three types of tonsil, depending on the length of the rent in the capsule: the sunken tonsil, the semi-extracapsular tonsil and the extracapsular tonsil.

To those who object to tonsil removal I would draw attention to the fact that Nature herself is the great tonsil operator. Her methods are unfortunately slow and incomplete. We have first the swelling of the gland element and consequent formation of the tonsil; following this, the next stage in the process is the atrophy of the gland elements and the replacing of them by connective tissue; in the end, the tonsil is replaced by a mass of scar tissue, when Nature's operation is completed. It is unfortunate that Nature takes many years to perform this operation, and in only a small percentage of the cases is the tonsil completely destroyed, but remains on in adult life a source of infection and trouble.

What do we hold against the tonsil that we should so demand its removal? In covering recent medical literature, we find the tonsil blamed for many ailments. I will enumerate some of them as follows: rheumatism, tubercular glands of the neck, chronic tonsilitis, quinsy, aural catarrh, laryngitis, glandular fever, appendicitis, osteomyelitis, ulcer of the stomach, general sepsis, meningitis, anemia, iritis, pleurisy, endocarditis, pneumonia, nephritis, orchitis, goiter, St. Vitus dance, acute infectious diseases of children—diphtheria, scarlet fever, cerebro-spinal meningitis; and, in fact, there is scarcely an ailment produced by either acute or chronic infection where the poison may not find its entrance through this channel.

The streptococcus, in its many forms, is a normal habitat of the mouth. It is on account of the virulence and activity of this germ that the prevention of a solution in the continuity of any of the tissues of the mouth is one of the most important principles of prophylactic medicine. After the sixth month from the time of the opening of the plica tonsillaris the tonsil becomes a

solution in the continuity of the tissues of the mouth. This ever present germ breeds constantly in the crypts of the tonsil, passing outward, and infecting not only the mucous membrane and sinuses of the carrier but all other members of the family as well. It passes inward through the lymphatic system to the blood stream and causes many of the ailments enumerated above.

The physician who advises the removal of the tonsil only when he finds it diseased is hopelessly out of date. We must learn to diagnose tonsil conditions by systemic manifestations, not by local appearances. Iritis, enlarged thyroids, chronic joint affections, the growing pains and extreme nervousness in children are samples only of many conditions which may be tonsillar in origin, yet impossible to diagnose by any local examination. Is not scarlet fever an acute infection of the tonsil by hæmolitic streptococcus? Is not St. Vitus' dance a rheumatic manifestation of the same germ? Glandular fever and acute nephritis are also similar products; but this arraignment could be continued indefinitely.

In this connection I would like to quote Dr. Brown, superintendent of the school clinic in our city, where 8500 children are examined annually. He says "One child in every twenty that we examine has albumin in the urine. This albumin can usually be traced to a tonsillar origin and clears up on tonsillar enucleation. One child in every thirty has heart lesions, which, in every case, can be traced to previous tonsillitis. Four in every hundred of the older boys are excluded from strenuous games on account of valvular lesions of the heart, all of which cases give a history of sore throat. Last year the superintendent reported a three per cent increase in general efficiency of the school children, due, I believe, to our campaign of tonsil enucleation. It would be impossible to overdraw for me the picture of tonsil perfidy."

Our city doctors in charge of the isolation department tell me that they have never found a case of diphtheria in a patient who has had the tonsils enucleated, and that diphtheria and scarlet fever are not found in such patients. Dr. Cullen Welty, of San Francisco, says, in regard to diphtheria at the isolation hospital: "We have not had a single case of diphtheria where the tonsils have been completely enucleated." Dr. Wilson Johnston declares that universal tonsil enucleation would put half the laryngologists and children's specialists out of work.

One word to pendulum swingers: We are constantly confronted with the statement that the pendulum of tonsil enucleation will soon begin to swing back. To these I would like to draw attention to the fact that the present improved status of the tonsil question is due to two causes: first, more accurate and more conclusive scientific and clinical data as to the tonsil's lack of useful function and to its pernicious power of germ breeding and aseptic absorption; second, to the improvement in our surgical technique, which is making the numerous unfortunate fatalities and frequent muscle lacerations a thing of the past. The pendulum, in this connection, has been "up in the air" long enough and will not reach the perpendicular until we arrive at the time of universal tonsil enucleation.

What, then, is the tonsil's credit that it should be retained? What about its developmental function? Its sexual function? Its voice function? Its protective function? Or the many other mythical functions that have been invented as an excuse for the existence of this pathological lymphatic gland? There is no direct evidence that it has any function, and if we used our microscopes more and our imaginations less we never would have looked for the gland to have a function beyond that of any ordinary lymphatic gland. The enlarged tonsil is, histologically speaking, identical with the enlarged gland of the coal miner, minus the coal dust deposit. Recently, in the query column of the Journal of the American Medical Association, we found the following answer: "There is no reliable evidence that the removal of the tonsils has any deleterious effect on the general system, but there is abundant proof that the results are in many ways decidedly beneficial." If the tonsil is the open door for the entrance of infection, then it is our first duty to close this door at the earliest possible moment and to put upon it the seal of scar tissue.

I advise early removal of the tonsils for two reasons: first, the early protection that it gives against infectious diseases, acute and chronic; secondly, because the operation is simple in direct proportion to the youth of the patient, and safe in direct proportion to its simplicity. I have said the younger the patient the safer the operation, and on this hangs the crux of the whole matter. The capsule and tonsil attachments in the adult are different from those in the child, and our ability to make the tonsil extracapsular from the semi-extracapsular or sunken tonsil comes to the vanishing point as the patient gets older and the

free head of the tonsil becomes attached to the surrounding tissues.

Let us take, then, the three types of tonsil: the extracapsular, the semi-extracapsular and the sunken. Now, if we imagine the tonsil as a lymphatic gland with a split in the capsule, and that split may extend for the whole length, two-thirds length or one-third length of the gland, we have an explanation for the three types of tonsil above mentioned: first, the extracapsular, in which the tonsil capsule has been split throughout its entire length; second, the semi-extracapsular or ordinary, in which the tonsil is partly extracapsular and partly intracapsular; and third, the sunken, in which the tonsil is almost completely within the capsule. It will readily be seen that the extracapsular type of tonsil can be removed by the cold snare without any further dissection or manipulation, and the first aim of the surgeon must be to make the second and third type of tonsil extracapsular, when they can be as readily removed as the first type.

The operation is performed in detail as follows:

Ether is always used as anesthetic, chloroform never. Apart from any scientific reasons, the history of the past few years shows ample evidence that chloroform should never be used in this operation.

"Head down" is the sheet-anchor of safety in all tonsil work. So-called ether pneumonias are operation pneumonias and should be called anesthetist pneumonias; and can be avoided if gravity is given a chance and a proper suction pump used. These patients should never be allowed to smother in their own secretions. The table used is one that can be lowered at a moment's notice. A double half-hitch is taken around the ankle and firmly attached to the table, so that the head may be lowered or raised without disturbing the position of the patient. A small amount of secretion, when churned to a froth in the small larynx of a child, will readily cause sufficient obstruction to endanger life. A suction apparatus is invaluable and should be in the hands of every laryngologist. A Green gag is used with which the lower jaw can be held forward in a semi-suspension position.

The great handicap to rational tonsil surgery, in the past has been the lack of a proper tenaculum. By a proper tenaculum I mean one that can be passed to the top of the intrascapular tonsil in all cases without including in its grip any part of the capsule or pillars and without destroying the normal cohesion of

the tonsil tissue. In my mind, the only instrument at present on the American market that answers these requirements is the Lewis tonsil tenaculum as made by Mueller of Chicago. The forceps tenacula used almost exclusively at present is entirely inadequate for this work. It usually takes in its grip only the extracapsular portion of the tonsil, and from the surgeon's point of view the extracapsular portion should always be disregarded. If it grips farther it is apt to include in its grip the edges of the pillars, and this is fatal to the performance of a scientific operation. If passed within the tonsil it must be opened before it can close, and in the opening breaks up the normal tonsillar resistance on which the operator must depend in making the tonsil extracapsular. The desire of the surgeon should be to make the peculiar anatomy of the tonsil assist him as far as possible so that, in place of a tedious mutilation, he gets a simple eversion. With this end in view, no incision is made and no dissection, either sharp or blunt, permitted.

The screw tenaculum is inserted with a reverse motion until the pillars are passed, then screwed up until firmly attached to the upper and most distant part of the intrascapular tonsil. The shank prevents too deep an attachment, so there is no danger of passing through the capsule and into the superior constrictor muscle of the pharynx. I now draw the tonsil toward the throat and, with a Hurd pillar retractor, turn the upper margin of the pillars back over the tonsil equator. This turns the capsule inside out, the entire tonsil having passed through the rent in its own capsule, when a snare readily removes the tonsil and capsule entire. If the space behind the anterior pillar is seen to bulge, the tonsil is not completely through, but with slight pressure over the bulging portion it will soon pass through and the space behind the pillar become vacant. I use the largest piano wire that the snare will conveniently handle.

A clear field and perfect illumination are necessary. Window illumination is not good enough for this work. If a screw snare is used and sufficient time given, the operation can be made almost bloodless.

The advantages of this operation are its simplicity of execution and its freedom from hemorrhage. Bleeding in tonsil operations, if immediate and severe, is usually from a large supernumerary vessel often seen lying like a snake at the bottom of the wound on the superior constrictor muscle. In this method

the operator works away from trouble instead of pressing the dangerous tissues into the instrument, and bleeding from this source is impossible.

In conclusion, then, I wish to go on record as advising the removal of every tonsil at four years of age, irrespective of its condition, or as much younger as infection may indicate. In view of the tonsil's lack of any proven function, its ease and safety of removal and its baneful effect on the economy, I do not see how any system of scientific reasoning can arrive at any different conclusion.

American Bank Building.

Some Surgical Considerations Concerning the Operation for Goiter. H. B. EPSTEIN, *Amer. Jour. Surg.*, Jan., 1917.

1. The collar incision should be of sufficient length to permit a free dissection, the ample space giving the surgeon better exposure and making the procedure safe. 2. The choice of alert assistants, for rapid hemostasis is essential. This together with speed saves the patient from unnecessarily long anesthesia, too much handling, and shock. 3. After separating the fibers of the sternothyroid muscle, keep close to the gland throughout the separation. If necessary, the sternocleidomastoid muscle may be cut across to give better exposure to the parts, the ends being sutured after the gland is removed. Care should be exercised to avoid the spinal accessory nerve. 4. Careful dissection of the posterior and lateral borders in order to avoid injury to the carotid sheath or the inferior laryngeal nerves. 5. Be sure to expose freely the upper pole of the gland so that a safe ligation may be performed with a generous pedicle. If necessary, cut the transverse layer of the deep cervical fascia. ED.

A CASE OF A RARE FOREIGN BODY IN THE ORAL CAVITY.

DR. JOHN L. LOUGEE, Boston, Mass.

Joseph T., aged six years, came to the Nose and Throat Department of the Carney Hospital, April 1, 1914. The following history was obtained from his mother: When about two years old the child was seized with a violent attack of coughing. The mother knowing his tendency for putting small articles in his mouth, suspected this to be the cause of the sudden paroxysm and made careful search but found nothing. The family physician was then called but an examination failed to discover any abnormal condition. The boy was then taken to a local hospital where several radiographs of the chest and stomach were made but they failed to reveal the presence of a foreign body. During the following five weeks the child's mouth was extremely sore

No. 1. Cutting edges of ring.

No. 2. Rounded surface of ring.

and for several days he refused to eat. Saliva, stained with blood, dribbled from his mouth almost constantly. At the end of this time he seemed to regain his normal appetite and health but the cause of the attack, with its train of symptoms, was still unexplained. Nothing further was done until about two years later, when the patient was taken to one of the larger hospitals on account of an impediment of speech and a foul odor of the breath. Here, after examination, the mother was told that there was no apparent cause for this condition and being in a measure reassured, no further attention was given the matter.

However, about two years later, on April 1, 1914, as the odor of the breath and the speech defect still persisted the patient was taken to the Carney Hospital, where he was seen by the writer.

When the boy was asked to protrude his tongue its unnatural mobility was plainly noticeable in that he was able, with apparent ease, to touch the tip of the nose, and to extend the organ two inches to either side of the angle of the mouth. This was found to be due to the fact that the frenum, with its vessels, had been completely severed. A necrotic area of about the size of a dime was found in the floor of the mouth just in front of the root of the tongue. On examination with a probe, a metallic substance was felt. The following day the child was given ether, the tip of the tongue was grasped with a tenaculum and drawn to one side. Examination with the index finger discovered the metal object to be a ring which encircled the tongue, making a deep depression, the tissues overlapping and completely hiding it from view.

After cutting the ring, beneath the tongue, with scissors, it was spread and removed without difficulty, very little bleeding following. The necrotic area was swabbed with tincture of iodin and the patient was allowed to leave the hospital on the third day after operation. He was subsequently attended in the out-patient department. The wound healed rapidly and when the boy was discharged three months later, his speech defect had entirely disappeared.

514 Commonwealth Avenue.

End Results of Treatment of Chronic Suppurative Otitis Media.

JOHN F. BARNHILL, *Jour. Amer. Med. Assn.*, Jan. 6, 1917.

The end results will depend upon the age of the patient, condition of the nose, nasopharynx and pharynx, nature and severity of the original aural infection, the presence of complications, the period of the disease in which the attempt to cure is made, the general physical condition of the patient, the efficiency of after-treatment. The author states that suppuration is cured in probably 90 per cent of cases. The effect on hearing of middle ear operation is good. Where bone necrosis occurs the patient's life is in danger and surgical treatment is the best recourse. ED.

FIBROMA OF THE LEFT NASAL CHAMBER, WITH EXTENSION INTO THE POST-NASAL FOSSA. REPORT OF A CASE,*

DR. THOMAS CHEW WORTHINGTON, Baltimore, Md.

Little is known as to the etiology of nasal fibroma. This particular form of nasal or naso-pharyngeal tumor is more frequent among males. With comparatively few exceptions it is confined to youth and early adult life. As the name implies, fibroma is "a tumor composed mainly of fibrous or fully developed connective tissue." (Dorland.)

Bosworth[1] states: "Perhaps no form of neoplasm develops and spreads with a more unrelenting progress than a fibroma; neither tissue, cartilage, nor bone seems to offer the slightest hindrance to its growth. . . . On account of its location and its nearness to vital parts, a fibroma of the nose will eventually prove fatal, unless subjected to successful operative interference."

According to Price-Brown[2] of Toronto: "The relentless growth of fibroma is one of its characteristics, and in this it resembles sarcoma. The more irregular contour with the presence of greater pain and a larger amount of surface sloughing should distinguish the latter; but it will require microscopical examination to complete the diagnosis. Without successful operation the result will always be unfavorable; a fatal result is inevitable."

Parker[3] of London, states: "The symptoms are, gradually increasing nasal obstruction, muco-purulent and later purulent and blood-stained discharge, attacks of severe epistaxis, a slowly progressing deformity of the nose and face, headache, anosmia, and deafness. In appearance the surface of the growth is smooth and red, but often coarsely lobulated. It is hard and immovable and highly resistent to pressure with a probe. If left alone it causes death by exhaustion, or encroachment on vital structures. The only successful treatment is the complete removal of the growth, the exact method of accomplishing which will depend on its size and attachments."

In the recent work of Wright and Smith[4] we find the following: "Personally Dr. Wright has seen only two or three growths in

*Read at the meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society, at Philadelphia, March 3, 1917.

twenty years' experience largely devoted to histological work which he has been disposed to call fibroma of the nasal chamber proper. Such purely intra-nasal growths as show little or nothing but dense, wavy fibers of connective tissue with sparse nuclei or cellular elements, and scanty blood vessels are exceedingly rare; round, smooth, hard, their density is such as to distinguish them from the usual nasal growth. Their base of attachment is usually a more or less constricted one. Their removal is usually not followed by recurrence."

J. Bland-Sutton[5] says: "Fibromata or tumors composed of fibrous tissue were regarded as common, but careful histological research has shown them to be very rare."

Fig. 1. June 17, 1902, before operation.

The abstracts which I have just read have been taken from well-known authors and definitely indicate the following opinions: that true fibroma is a rare form of nasal growth and that sooner or later nasal or naso-pharyngeal fibroma will become incompatible with life, either from pressure on important structures, or from the exhaustion of hemorrhage incident to this disease. It is a clinically established fact that with few exceptions fibroma of the nose, the naso-pharynx, or of both is sessile; its base of attachment is broad; when pedunculated the question as to whether it is true fibroma is in doubt until verified by the microscope. The treatment of nasal fibroma is surgical, whether by the knife, forceps, snare, cautery, or by the injection of destructive chemicals. The application of radium and of the x-ray have as yet been limited. The position of

the tumor near important structures, its density, broad attachments and vascular environment make strong efforts at evulsion dangerous in the extreme, yet this danger is not nearly so great as that resulting from the severe and exhausting hemorrhages which sooner or later will occur, but which rapidly supervene on surgical interference with these fibrous tumors. The prognosis is bad in proportion to the size and attachments of the tumor. That the ingenuity of the surgeon is often severely taxed, I found to be true in the case which I now desire to report.

R. D., white, aged 16 years, was referred by Dr. J. E. Bromwell of Mt. Airy, Md., June 17, 1902.

History. The patient does not remember ever having breathed well through his nose. For about one year the left side of the

Fig. 2. After Sept. 18, 1902.

nose had been entirely closed; very little air passes through the right side and then only at times. There is difficulty in swallowing. There is a confused feeling in the head. He cannot think well.

Examination at office: Present conditions and description of the nasal growth. The right nasal chamber is very narrow; this is caused by pressure on the septum from the mass in the left nasal chamber. Anteriorly the fibroma fills the left nasal chamber completely and protrudes from the vestibule of the nose. The external nasal wall and the septum are eroded. The inferior turbinal body has been destroyed. The appearance of the growth is a grayish pink; it is firm to the touch and immovable. No air passes through the left side of the nose even with the greatest effort, and very little air passes through the right side. Posteriorly the left choanal open-

ing is sealed; the growth extends from the roof of the post-nasal fossa of the left side to the palatal floor and across to the right side. In a pyramidal form it arises from the floor of the fossa and partly closes the right choanal opening.

Subsequent operative measures showed that the fibroma was attached to the body of the sphenoid, including the sphenoidal sinus which had been completely obliterated and that the ethmoidal labyrinth had been greatly destroyed.

The following examinations and subsequent operations were made at the Baltimore Eye, Ear and Throat Hospital:

June 18, 1902. Examination under cocaine and adrenalin. No impression could be made on the growth either anteriorly or pos-

Fig. 3. Jan. 20, 1904.

teriorly. Even with slight effort at examination, bleeding was profuse but was easily controlled.

July 12, 1902. First operation under general anesthesia. In order to guard against excessive hemorrhage incident to operation, I made use of Bernays' large aseptic sponge in the following manner: Linen tape was fastened to the sponge through two openings made in the center of the disc, and after the patient was asleep the ends of the tape were carried up through the right side of the nose and given in charge of an assistant. The Bernays sponge was kept well out of the mouth and protected by the assistant. The instant it became necessary to stop the hemorrhage, the sponge was pushed up into the post-nasal fossa and by drawing forcibly on the tape the fossa was tightly closed. The pressure was equalized by the swell-

ing of the sponge, thus immediately checking all bleeding posteriorly. Anteriorly the hemorrhage was controlled by the usual methods. There was no post-operative hemorrhage at any time.

The snare could not be used either anteriorly or posteriorly. Cutting or evulsion forceps made no impression on the growth. I made use of Asch's gouge within the nose in the effort to break through or to loosen the growth from its attachments, apparently with some effect, but even in a few minutes much blood was lost and it quickly became necessary to tampon tightly.

July 20, 1902. A stream of water could be forced through the left nasal cavity, but no air could be forced through the nose by the patient. The growth in the nasal passage was apparently smaller

Fig. 4. Specimen.

than at the time of the operation on July 12. The growth was not so full in appearance, and, viewed in the post-nasal mirror, several irregular openings could be seen. At this examination, July 20, a partially detached piece of the fibroma was removed by evulsion through the post-nasal fossa. A microscopical section of this piece was made. The boy's breathing was still so unsatisfactory that he was anxious for another operation.

July 29, 1902. Second operation under general anesthesia. The growth was still so adherent and unyielding that I hesitated to use the force necessary for evulsion. With long, specially made, transfixing needles I endeavored to engage a part of the growth with the snare but with no success.

A Bosworth saw was then forced through the left side of the nose and into the post-nasal fossa and with a finger in the fossa as a guide.

I endeavored to saw through or ream out the growth; but on account of profuse bleeding it was again necessary to tampon as before. After the tampon was removed and in order to retain the opening made, and for the purpose of exerting pressure on the growth, a rubber obturator fashioned from a piece of thick gray rubber was now passed forcibly through the nose, and well back into the naso-pharynx; this was worn for two weeks. It was removed only for cleansing purposes during this time.

September 17, 1902. There was less growth in the nasal chamber, except about the sphenoidal region where the fibroma was still prominent; the size of the growth in the post-nasal fossa was also less, and the mirror showed several large openings into the nose.

September 18, 1902. Third operation under general anesthesia. Again the snare could not be made use of, the toughness and smoothness of the growth were such that no piece could be caught and held within the loop of wire; therefore, alternating with Beckman's scissors and Seiler's knife passed in through the nose, I endeavored to destroy the growth within the nose and around the choanal opening as much and as quickly as possible; this was followed by rapid evulsion with forceps used both anteriorly and posteriorly. By this method several large pieces of the growth were removed. This required only a few moments, but bleeding was severe and the nose and naso-pharynx were again tamponed tightly.

After the third operation the nasal breathing was clear. About the outer margin of the left choana and around the floor only an irregular rim of the growth could be seen; the growth in the lower part of the right choana was also much smaller; the sphenoidal body was yet well covered with the growth but to a much less extent than before the last operation.

On December 3, 1902, I noticed a slight increase in size of the growth about the sphenoidal body extending to the outer wall of the left nasal chamber. The patient had lost much blood and he was very anemic; he was in no condition for further operative measures at this time. On this date I therefore made two injections into the growth of a saturated solution of zinc chloride (10 m. each); this produced a slough, and for a week or more caused severe pain. This treatment seemed to have impaired the nutrition of the growth temporarily, but in size it soon assumed the same proportions as before the injections.

Between January, 1903, and March, 1903, I made several injections into the growth, alternating with trichloracetic acid, and with crystallized carbolic acid. The reaction from these injections in-

cluding pain, stiffness of the jaws and neck, and with an offensive slough, was out of proportion to the diminution in the size of the growth. On August 18, 1903, there was a marked increase in the size of the growth about the sphenoidal body and downward into the nose. The patient had not yet recovered his strength from previous operations. Dr. Christian Deetjen, by my request, now used the x-ray on the growth, applying the ray through a tube in the nose. After four exposures the growth was not so plump or full as before, and it was much paler. Under the continuation of this treatment the fibroma gradually disappeared and on January 20, 1904, no growth was perceptible in the nose or in the post-nasal fossa. A year later, the patient was again examined and showed no sign of the growth; he was then in robust health.

After a period of ten years from the time of disappearance of the growth (March, 1914), the patient came to see me. The nose was still clear and there was no evidence of the fibroma; but he was ill; his legs were edematous; he had recently contracted syphilis and had been a very heavy drinker for several years. A few weeks later his mother informed me that her son had died from disease of the kidneys, at the age of 28.

Dr. Standish McCleary, Professor of Pathology in the University of Maryland, has kindly prepared the following description of the section, made of a mass of tissue removed from the post-nasal fossa, after the second operation on July 20, 1902:

"Part of the surface is covered by a mucous membrane composed of stratified ciliated epithelium, resting on a tunica propria containing mucous glands. The bulk of the section consists of closely packed bundles of dense, fibrous tissue; between the bundles are the characteristic cells of this form of connective tissue; some of the bundles are hyaline, but nowhere is there any tendency to myxomatous change; the blood vessels are abundant and of considerable size. Attached to one margin of the section is some cartilage containing quite an amount of fibrous tissue in the matrix. The growth is a particularly pure form of *fibroma durum,* hard fibroma."

In summarizing, I would call attention to the following:

(1) Only the most radical treatment could have impaired the vitality of this growth.

(2) Notwithstanding that the fibroma had been nearly destroyed, it suddenly showed evidence of re-growth about the sphenoid, and after treatment by the x-ray its absorption became complete.

(3) Until the young man's death ten years later there was no return of the fibroma.

(4) In the case here reported, the fibroma showed every evidence of endonasal origin in the sphenoidal body, subsequently invading the post-nasal fossa by extension.

In conclusion I would point out that few cases of nasal fibroma are reported *as such,* although there has been a steady increase in the number of cases reported of naso-pharyngeal fibroma.

In THE LARYNGOSCOPE Index-Medicus of Oto-Laryngology for the years 1909-15 inclusive, thirty-five cases are reported of naso-pharyngeal fibroma. We find but one case of edematous fibroma of the nasal fossa, one of choanal fibroma, and one case of fibroma of the nose. This further indicates the rarity of true nasal fibroma, and this as well as the satisfactory result of treatment is my reason for reporting the case.

The specimen shown in the photograph represents but a small portion of the growth removed. The drawings as indicated by the dates, show the various stages in the disappearance of the tumor.

BIBLIOGRAPHY.

1. Diseases of the Nose and Throat, 1897, p. 227.
2. Diseases of the Nose and Throat, 1900, p. 129.
3. Diseases of the Nose and Throat, 1906, p. 369.
4. Diseases of the Nose and Throat, by Wright and Smith, 1914, p. 247.
5. Tumours, Innocent and Malignant, 1906, p. 59.

1022 Madison Avenue.

These Cases Exemplifying Some Likely Common Causes of Cancer of the Throat and Some Facts About Treatment by Diathermy. W. STUART-LOW, Proc. Royal Soc. Med., Section Laryngol., Jan., 1917.

As regards contributory causes of cancer syphilis has been present in every case that the author investigated. Sepsis of the mouth, generally in an aggravated form, has invariably existed and the saliva has been found to be quite acid in reaction. Dental deficiency seems also to be a contributory cause. Diathermy proved to be very helpful in these cases. It undoubtedly relieves the pain and it seems best to repeat the application at intervals of a few days and not to apply it at one time too extensively or too severely. It should be employed as early as possible. ED.

SINUS DISEASE WITH EXTERNAL DEFORMITY CURED BY PARAFFINE INJECTION.*

DR. S. G. DABNEY, Louisville, Ky.

On August 29, 1915, I was consulted by a lady apparently between 25 and 30 years old in regard to pain in her head and a turning outward of her left eye. The lady's complexion was very sallow, and her voice decidedly nasal; the left eye generally deviated far outwards, though sometimes it would appear nearly straight; but what struck me most at first glance was the odd way in which this lady wore her hair—some of it being brought down on the forehead nearly to the eyebrow. When she came from the reception room into my office I found that this hair concealed a depression over an inch in length, about half an inch in width and half an inch in depth. She was decidedly tender to pressure over the antrum of Highmore on the left side and at the upper inner angle of the orbit. Looking into the nose I found a large amount of pus in the region of the middle turbinate, the anterior end of which had been removed.

Transillumination showed the antrum of Highmore and the region of the frontal sinus on this side both dark. After cleansing the nose thoroughly I had the patient lie on the sofa with the head hanging downwards and the affected cheek uppermost. On sitting in the chair again, abundant pus was found oozing from the middle turbinate region. The ethmoid region was swollen and a probe carried into it brought further pus.

I advised the patient to have an operation on her antrum of Highmore and on her ethmoid, and also told her I thought I could fill up the cavity with paraffine.

The history as given below showed me that the eye trouble was due to an entirely different cause, but I advised her to have an operation on the eye also to straighten it. She accepted my advice.

I did an advancement of the internal rectus muscle on the eye and had the annoyance, which I have never had before in an advancement of producing an over-correction, drawing the eye somewhat inward. However, I corrected this later by advancing the external again to a moderate degree, and produced finally a straight eye with good movement in all directions.

*Read before the Jefferson County Medical Society in Louisville, Ky., November, 1916.

For the depression in the brow, I injected paraffine (I have never been able to use this cold as the books often recommend). I made three injections of warm paraffine at intervals of some weeks with almost a perfect result so that the depression is practically obliterated.

After removing the anterior third of the inferior turbinate, I made a large and free opening into the antrum of Highmore. On various occasions I curetted and removed parts of the ethmoid cells.

All the work was done at my office under local anesthesia except the two operations on the eye. The result has been, as the lady herself describes, a straight eye, her hair worn in the usual way with the natural looking brow and only slight discharge from her nose. She still has occasional pain on the affected side, still carries out cleansing treatment to the nostril, making it a part of her toilet and not much more trouble than cleaning her teeth, and now and then visits me when a little crust has accumulated in the nose and she suffers some pain in the eye. A simple easy removal of this crust gives her prompt relief.

I submit herewith the patient's history of her case. It will be observed that she has arranged the history according to years, beginning with the first year of her life when the accident to her eye occurred.

It will be observed, that in the main the symptoms were typical of sinus disease; the profuse one-sided discharge, the pain worse in the morning and diagnosed "sun-pain" and treated as malaria, the tenderness to pressure all around the left eye and the inability, as time went on, to concentrate her attention or to hold things in her memory.

In the first place the deviation of the eye had nothing to do in this case with the sinus trouble, nor do the headaches in childhood appear to be connected with it—perhaps these headaches were relieved by the glasses ordered in 1898.

In the second place, there is a doubt in my mind whether the *severe* nervous symptoms that this lady complained of were really due to the suppurative sinus disease; they occurred at the time when she was under a very great nervous strain from illness in her family and perhaps the sinus was only an additional cause of these symptoms. The mental hebetude and inability to fix the attention were doubtless due to the sinus suppuration.

In the third place, I would note that the result has been what I frequently find, namely, wonderful relief—perhaps practical cure—

but still occasional crusty or purulent discharge requiring cleansing at home, and occasional visits to the office to make more perfect cleansing of the nose.

When the nose becomes obstructed or congested she has pain in this eye which is quickly relieved by nasal treatment.

1886—Age about eight months: While creeping found a toy with rusty wire protruding. Wire caught in left eyelid; instantly jerked out, tearing lid and injuring eye. Attended by physician in my own town. Stitches repeatedly pulled out leaving torn lid. The eye turned out and the sight was impaired, but I was able to distinguish objects and light.

In childhood always subject to "blind headaches"—no apparent cause of attacks. Begun in morning with queer sensation and blurred vision. After an hour or so intense pain began over left eye, right eye or both. Slightly more frequent over left. Continued at least a day and night. Nothing relieved pain, but more bearable in dark, quiet place.

1898: Went to eye specialist for glasses to relieve headache.

1901: In boarding school. Building kept at high temperature; drove out in country for week end on cold November day, took severe cold; left side of head continued to discharge after the "cold" was well. No special pain, but great discomfort from excessive amount of discharge at the same hour each morning. Necessary to leave classroom.

1902: Another eye specialist changed glasses. Examined nose and remarked that I would likely have trouble from conditions then existing in left side of head. Advised use of atomizer.

1903: "Blind headaches" less frequent. Last attack in 1903, lasting a week.

Autumn: Daily headaches diagnosed by local doctor as "sun-pain." Severe pain began about eight o'clock. Pain grew less at noon, but face around left eye very tender to touch and seemed "puffed up." By evening free from pain but the pain began again in the morning. Treated for malaria. Little relief until summer

1904: In college. Expression teacher sent me to a specialist on account of "nasal twang in speech." This physician treated throat and head for some months. Voice better at times but no permanent improvement. Treated for tuberculosis. Advised to go to a warm, dry climate.

1905: No improvement in head. Average weight 120 pounds; *very sallow.* College doctor treated me for "jaundice."

1907: Spent winter in Florida. Returned to Kentucky. In Louisville for a week. Had severe pain in face and eye and consulted a specialist the day I returned home. He said operation was necessary for "sinus trouble." Returned home, suffered great pain in left side of head and ear. In two weeks went to a large city in Indiana, where the infirmary and the specialist nearest my home were. This specialist treated throat and eyes for two weeks, changed glasses and said I did not need an operation.

1908: In February, while in college in Florida "sun-pain" returned. Pus on left side of head, intense pain mornings. Left side of face "puffed out," especially over left eye. Difficulty in new studies; could not retain new lessons when learned. Local physician ordered all new work stopped. Advised going to a specialist as early as possible.

In June, I went to a specialist in a large city in Florida. He removed a piece of bone from the nose; treated head six weeks. Greatly relieved.

1909: Returned to Kentucky in March. In a short time partially lost use of left arm; left half of tongue and the left side of the face under the eye was numb; difficulty in speaking. In May, lost all use of left arm except when looking at my hand. Any object in the hand fell if I did not keep it in mind. Under family physician's care; father ill at the same time of apoplexy. Slightly improved and returned to Florida in September.

1910: Spring. Teaching normal class. Had to keep a "grip on mind" or would repeat lesson assignments or explanations. Sometimes conscious of this afterwards, sometimes not. Very confusing. Had this trouble occasionally the next year.

1914: Called home from Florida in April on account of mother's illness. During summer, pain in head; arm and other symptoms returned. In autumn, went to an eastern hospital. A surgeon very distinguished for his brain surgery operated for "frontal sinus" trouble.

No more pain over the left eye; other conditions the same. Discharge continued. Gained weight, felt very well. The surgeon said when I left the hospital, "I see no reason why in time you will not get well, and be able to stay in any climate." In five or six weeks after operation, depression began to appear over the left eye reaching from eye to the middle of forehead; grew worse until it was about one and three-fourths inches long and one-half inch deep, just above the eye.

1915: Pain in face below the eye. Difficulty in breathing through the nose. Great discomfort from discharge. Very sallow.

Autumn: Consulted Dr. Dabney. He obliterated the depression over the left eye and straightened the eye. Treated antrum and operated on the nose.

1916: Depression filled. Antrum well. Eye straight and sight improved. General health splendid. Average weight 135 pounds. Slight discomfort in head (ethmoid) but with persistent home treatment—warm water and peroxide with dropper and with cotton on applicators—able to keep head fairly clear without irritation. Except occasionally head has a stopped-up feeling and the left eye gets red and has a burning sensation. Very unpleasant until head clears again, usually after some hard substance has been removed.

911 Starke Building.

A NEW NASAL SEPTUM SPLINT.

Dr. Margaret F. Butler, Philadelphia.

This simple device for the coaptation of the septal mucous membranes after submucous resection has given perfect satisfaction. It consists of two light plates of German silver. A movable flange attached to each plate projects from the nares, and these are secured in front of the columna by a slide catch. The plates make light and uniform pressure on the septum and prevent the formation

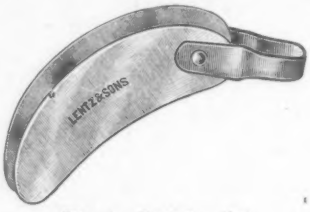

Fig. 1. Septal splint.

of hematoma and bleeding. They are comfortable, the patient being able to breathe through the nose with them, and they cause no inflammation of the tissues such as we had when we used packing or the Simpson-Bernay splints. The splints may be removed at the end of twenty-four hours.

1831 Chestnut Street.

AN ELECTRICAL NOISE APPARATUS,

DR. MAX LUBMAN, New York.

I take the liberty to present to the profession a new electrical noise apparatus, which on account of its simplicity and small expense should find a ready response. We have now in use several contrivances for testing unilateral deafness, among others Barany's and Newman's. But these latter devices are so complex and expensive as to render their ready use prohibitive.

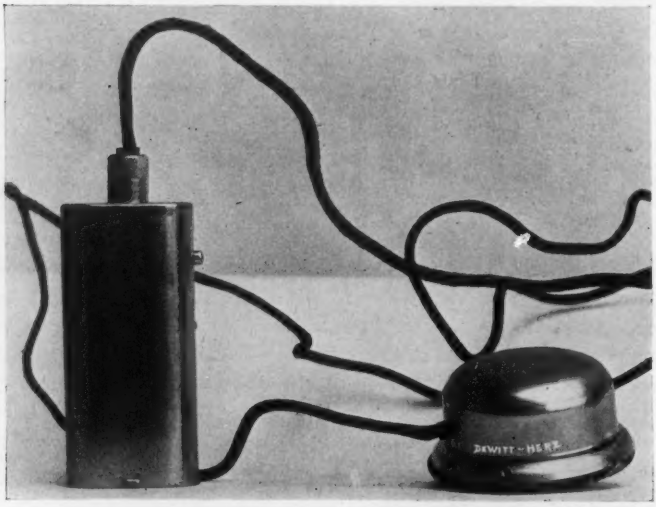

Fig. 1. Electrical noise apparatus.

The proposed electrical noise apparatus is composed of two magnetos, two coils and a vibrator set in a nickel case with a fiber base. It is operated by a small vest-pocket battery, easily procurable at any electrical supply store.

It may also possibly serve another advantage in that by not having an ear-piece as Barany's, it is applied directly over the ear of the patient and thereby excludes any transmission of sound through the bone of the ear.

616 Madison Avenue.

EDITORIAL DEPARTMENT

PERORAL ENDOSCOPY AND LARYNGEAL SURGERY.

Edited by
DR. CHEVALIER JACKSON, Philadelphia.

FOREIGN BODIES IN THE INSANE.

It seems quite likely that if routine radiography of the insane were regularly carried out, many obscure symptoms would be found to be of foreign body origin. Whether such routine radiography would have a deleterious effect on the mental condition of some patients the writer is unable to say; but it seems highly probable from the literature that there are many undiscovered cases of foreign bodies in the insane.

Dr. T. McS. Barrett (*Jour. Am. Med. Assn.*, Sept. 18, 1915) reports one of the most remarkable cases of laryngeal toleration of a foreign body that has appeared. The editor has obtained the specimen and has had a radiograph (Fig. 1) made from it. The report of the case is abstracted as follows:

A male negro, 40 years of age, confined in the Western Pennsylvania Hospital for the Insane for dementia praecox, died of a complication of diseases including chronic nephritis, pericarditis, endocarditis with valvular disease. Acute gastritis developed during the last three days preceding death which seemed to be due to exhaustion. A post-mortem by Dr. T. T. McS. Barrett revealed a brass key, two inches long, in the larynx, the ring end resting on the cords. In the right pyriform sinus was a screw-eye, one and one-half inches long, its screw-end extending upward above the glosso-epiglottic fold. There were no signs of local inflammation except on the epiglottis which showed a slight excoriation of its under surface where it had been subjected to pressure of the upper end of the key during swallowing. Both articles were wrapped in cloth which was very putrid. Although evidence is lacking to fix the exact time of the lodgment of these foreign bodies, the nature of the circumstances as well as of the presence of the articles at necropsy seems to justify the assumption that they had been in the throat for at least three weeks. With the exception of the comparatively mild vomiting which occurred only after eating, there were no violent symptoms of coughing, gagging or choking such as would be likely to accom-

pany the presence of foreign bodies in the throat. The supposition is that this man, having found these articles while working outside,

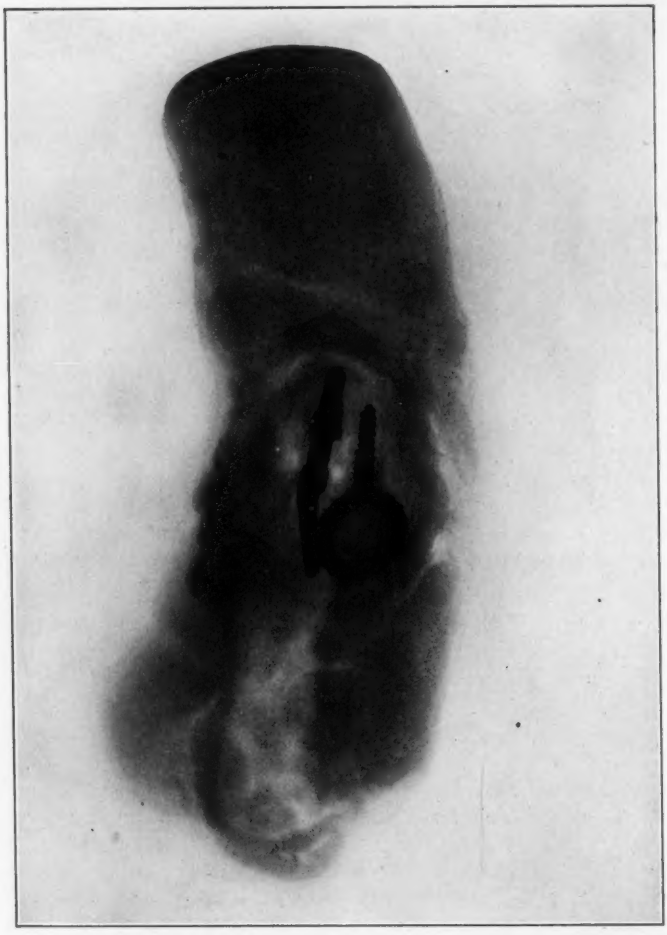

Fig. 1. Radiograph of post-mortem specimen of tongue, larynx and pharynx of an insane patient, showing a key and a screweye as they were found post-mortem.

and recognizing their utility for a special purpose that he had in view and fearing to be deprived of them during the search to which all patients submit at bedtime, sought to conceal them in his throat

intending when necessary to recover them by regurgitation. Both of the objects projecting upward into the pharynx would have been readily visible on indirect laryngoscopy, and could easily have been removed. No examination was made of the throat because the man had a delusion that he was a deaf mute. It was known that he could both hear and speak. It seemed quite certain that the presence of the foreign bodies had absolutely nothing whatever to do with the patient's death.

SOCIETY ELECTIONS.

At the annual meeting of the American Otological Society held at Atlantic City, N. J., May 29 and 30, the following officers were elected:

President—Dr. Norval H. Pierce, Chicago.
Vice-president—Dr. Ewing W. Day, Pittsburg.
Secretary—Dr. George E. Shambaugh, Chicago.

At the annual meeting of the American Laryngological Association held at Atlantic City, N. J., May 28, 29 and 30, the following officers were elected:

President—Dr. Thomas H. Halsted, Syracuse, N. Y.
First Vice-president—Dr. John E. Rhodes, Chicago.
Second Vice-president—Dr. Crosby Greene, Jr., Boston.
Secretary—Dr. Harmon Smith, New York City.
Treasurer—Dr. J. Payson Clark, Boston.
Librarian—Dr. J. H. Bryan, Washington, D. C.

At the annual meeting of the American Laryngological, Rhinological and Otological Society held at Atlantic City, N. J., May 31 and June 1, the following officers were elected:

President—Dr. George L. Richards, Fall River, Mass.
Vice-president—Dr. Crosby Greene, Jr., Boston, Mass.
Vice-president—Dr. D. W. Layman, Indianapolis, Ind.
Vice-president—Dr. T. W. Moore, Huntington, W. Va.
Vice-president—Dr. F. R. Spencer, Boulder, Colo.
Vice-president—Dr. F. B. Graham, San Francisco, Cal.
Treasurer—Dr. E. W. Day, Pittsburg, Pa.
Secretary—Dr. W. H. Haskin, New York City.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Meeting of Dec. 20, 1916, cont'd.

Report of a Case of Pansinusitis on One Side with Tic Douloureux on the Other Side. No Operation; Necropsy with Unusual Findings. DR. WILLIAM LEDLIE CULBERT and DR. JAMES G. DWYER.

(To be published in a subsequent issue of THE LARYNGOSCOPE.*)*

DISCUSSION.

DR. JOHN GUTTMAN said he would like to ask the roentgenologist whether the left antrum in that plate was clear. The right one was so absolutely obscured that one might not suspect infection of the left because the contrast was so great, but in reality the left ethmoid and maxillary sinuses appears to him diseased also. If his conception is correct, the whole clinical picture will have a different aspect.

DR. FREDERICK M. LAW said the left antrum was not absolutely clear but the contrast between the right and the left was so great that in comparing one was very apt to consider the left as clear. This plate was made some time before the patient's death and it was quite likely that at the time the plate was made there was less involvement on that particular side than at the time of autopsy. The plate shows irregularity on the inner wall of the orbit and the autopsy findings showed a perforation into the orbit, but one would not have been justified in making such a statement from the plates.

DR. WILLIAM H. HASKIN said, in regard to Dr. Law's remarks, that it was not uncommon to find large dehiscences in the inner wall or ethmoid plate of the orbit. He had ten or twelve specimens with very large dehiscences of the inner plate of the orbit opening into the nasal cavity. In this case there was evidently some old diseased condition.

DR. CALLISON asked: As pus was present in the left mastoid, did suction increase the amount?

Reference to Dr. Mayer's case at last meeting, claiming priority of total removal of the epiglottis under suspension for cancer.

DR. ARROWSMITH asked to be permitted to correct a statement he had made at the last meeting, in the discussion of Dr. Emil Mayer's report of a case of "Carcinoma of the Epiglottis: Removal Under Suspension." Dr. Mayer claimed that this was the first instance of complete removal of the epiglottis under suspension. Dr. Arrowsmith thought that he had anticipated Dr. Mayer by complete removal of the epiglottis under suspension for *tuberculosis* some time previously. He found by referring to his records that his operation was two weeks *later* than Dr. Mayer's. He would like, however, to claim priority for the first complete removal of the epiglottis under suspension for tuberculosis.

Cervical Gangrene Complicating Ludwig's Angina. DR. IRVING N. VOORHEES.

(To be published in a subsequent issue of THE LARYNGOSCOPE.*)*

January 24, 1917.

DR. DUNCAN MACPHERSON, Chairman.

Patient Showing Result of Operation for Congenital Atresia of Left Choana. DR. GERHARD H. COCKS.

The patient, a boy fifteen years of age, has never been able to breathe through the left nostril. At birth, the obstetrician experienced considerable difficulty in establishing respiration. The nasal obstruction is absolute. Fluids syringed into the left nostril fail to enter the nasopharynx.

Since an attack of measles when six years old, the patient has had a chronic discharge from the right ear, the drum showing a small central perforation. Occasionally the discharge ceases for a time.

The boy first came under observation in September, 1916. He stated that he had visited a doctor six months before, who removed the left inferior turbinate bone and encountered a bony plate obstructing the left choana. Examination at the New York Eye and Ear Infirmary showed a bony partition completely occluding the posterior opening of the left nostril. This was easy to see because the inferior turbinate had been removed by the family physician. On posterior rhinoscopy, the posterior edge of the left middle turbinate could be seen to the upper and outer side of the bony plate which filled in the remainder of the choana. In addition there were present hypertrophied tonsils and adenoids, and a bad deflection of the septum to the left.

Under ether anesthesia, with a metal protector passed through the mouth into the nasopharynx to protect the posterior pharyngeal wall and Eustachian tube, the bony septum was bored out with a dental drill, using a Myles' antrum burr fitted with a long shank. In order to obtain more room, the posterior portion of the vomer was removed with a curved tonsil punch, working through the mouth. Subsequently the adenoids and tonsils were operated upon, and later a submucous operation was performed.

The post-operative treatment consisted in keeping the nose clean. Bougies were not employed. For almost four months the hole in the bony plate has remained open, and has not contracted down nor filled in with granulations.

A comparison of the breathing space in the two nostrils, made with the speaker's metallic mirror, is here shown. The members of the Section will note that the breathing is apparently as good on the operated side as upon the sound side. At present the ear is dry.

DISCUSSION.

DR. HARMON SMITH, referring to Dr. Cocks' case, said that he has seen three cases of congenital atresia of the nasopharynx. The first of them a number of years ago. In this case the patient was a boy, and the entire right nostril was filled with bony tissue. By operating he was enabled to give the boy breathing space in his nose. The patient has since married and has two children, but suffers with bronchial asthma and that side of the nose operated upon still fills up with scabby secretions.

The second case was seen in consultation with Dr. Mackenty. Dr. Mackenty followed up this case for some years, but the ultimate contrac-

tion brought it down to the point where there was about the same breathing space left, as is shown in Dr. Cocks' case at the present moment.

The third case was that of a little girl who came to the Manhattan Eye and Ear Hospital a few years ago with an obstruction, partly bony and partly membranous. In this case the opening was cut through with a good result.

DR. SMYTH said that he had had a case last summer with complete congenital bony obstruction of the nostril, which was discovered with a posterior mirror examination. Under cocain, and with his finger in the post-nasal space as a protection, he succeeded in getting a fair opening, about the size of that shown in Dr. Cocks' patient. She was told to return if she did not breathe easily, but she is still doing very well. In that case the right nostril was improperly developed, and was not the same size as that on the left.

DR. COFFIN said that he had treated a case a short time ago, which Dr. Harris would recall, in which there was a complete bony occlusion. It was opened up originally with a Myles antrum punch. After this, the opening was enlarged by means of a punch forceps. It had a great tendency to close up, as has an opening through the inferior meatus into the antrum. Tampons were drawn into it having a string attached, which made insertion easy. This was continued for some time. The last time he saw this patient, she was breathing through the nose, but, as Dr. Smith had said of his patient, she was troubled with the nose filling with secretions.

Empyema of the Ethmoid and Frontal Sinus, With Perforation Into the Orbit; Staphylococcus Aureus Infection; Operation; Recovery. DR. THOMAS J. HARRIS.

The patient is a young man, sixteen years of age, and was first seen five weeks ago. At that time, his left eye was completely closed; there was a phlegmon of the upper and lower lids, the involvement extending to the right eye. His temperature was 102.2° at two o'clock, and at four o'clock it had gone up to 105.2°. There was a copious discharge of pus from the nose, and exquisite tenderness over the left frontal bone as far as the median line and down that side of the nose. A diagnosis was made of ethmoidal and frontal empyema, with probable involvement of the orbit. There was no exophthalmous and no turning out of the eyeball.

The patient was operated upon the next day. The usual incision was made over the eyebrow, and pus was found under the periostum. The frontal sinus was full of pus; the mucous membrane was entirely gone. The ethmoidal sinus was exenterated intra-nasally and found to be badly diseased. A perforation was sought for and finally found on the inner wall of the orbit back toward the sphenoid, where was seen the same appearance as in the frontal bone—distinct evidence of necrosis, the area being approximately a centimetre in each direction.

The diseased bone was removed and the wound drained by gauze strips at the first dressing, carried from the orbit out of the nose. The boy when first seen was semi-comatose, and there were suggestions that the

disease had involved the meninges, although there were no pronounced symptoms. An x-ray taken two days afterward confirmed the clinical diagnosis, and a specimen from the nose showed staphylococcus aureus; the same organism was found in the nostrils where there was a little pus, and also in a pure culture from the blood. On the day of admission there was a leucocytosis of 33,000 with 84 per cent of polynuclears; this dropped after the operation, but stood high for a number of days. The temperature remained around 105° for fully a week. On the third or fourth day he was given an autogenous vaccine, repeated in three days, and again three days later. After the first inoculation, the temperature dropped, and he steadily improved, until he attained the appearance shown to-night.

The frontal sinus is perfectly clean; the large area on the orbit has filled in, and while there is still some secretion in the nose, the patient says that he blows it very easily and very little, and there is nothing to be gotten out by irrigation. The case seemed to be of interest, for while a chronic perforation is very common, an acute perforation is rare. Hajak speaks of only one case which he had seen, in which there was an acute perforation. His explanation seems logical,—that there has been at some previous time an inflammation of the ethmoid with a formation of polypi and hypertrophied tissue, followed by another infection and discharge, and a breaking through into the orbit.

Dr. Harris said he did not wish to give the impression that this was an acute ethmoiditis. It was undoubtedly an acute exacerbation of a chronic case.

DISCUSSION.

Dr. Cocks said that Dr. Harris' patient showed the good result of his skill and careful attention. Dr. Cocks felt, however, that the technique employed for the radical operation was neither the safest nor the best for use in such a case. In the first place, the incision made by the operator should have been carried down on the side of the nose to the level of the floor of the orbit in order to exenterate the ethmoid cells. Dr. Cocks considered it both unsafe and unwise to attempt to remove the ethmoid labyrinth by the intranasal method under general anesthesia, when the same object can be accomplished much more safely and thoroughly by the external route.

Dr. Coffin said he had asked that the patient wait for a few moments as he wished to ask some questions that might be mooted. The external incision in Dr. Harris' case did not extend downward as far as the inner canthus of the eye, and that therefore he could not understand how one could make out an orbital perforation "well back toward the sphenoid." He thought Dr. Harris had made a lapsus lingua. Dr. Harris had probably saved the patient's life. Dr. Coffin agreed with Dr. Cocks that once the patient was under ether the exenteration of the ethmoid could be done more thoroughly and more safely. Apparently there has been a considerable epidemic of the staphylococcus aureus infection recently. In the Manhattan Eye, Ear, and Throat Hospital there were no less than six cases yesterday of orbital cellulitis, all due to this same organism.

Dr. Smith said that he had a case similar to Dr. Harris' which he intended to report later, which emphasized the virulence and the rapidity

with which the staphylococcus aureus acts. This organism is causing considerable disturbance this winter, more than he had ever before observed.

Dr. McCoy said that at the New York Eye and Ear Infirmary the majority of the cases that he had seen were of this type. Many of them come to the eye service, but the majority of them have temperature if the pus discharge is shut off from the nose. Polypi and granulations form in the nose in these cases and shut off the discharge, and there is always more or less temperature reaction.

Referring to Dr. Harris' case, he said that he had seen another patient who was operated in a similar manner. The bad feature of that type of operation is that it is difficult to remove the ethmoid cells completely without taking away the vertical plate of the maxillary bone and completely exenterating the cells. The case to which he himself had referred was first seen by him two or three months after the operation. The patient was a boy ten years old. He was still draining pus from the nose and had developed a swelling at the hair margin. An incision was made and a probe passed down to the dura, and passed into the frontal sinus, which was still draining. The patient had an epidural abscess which came out on the forehead, and eventually he developed a brain abscess. Although the patient which Dr. Harris had presented looked very well at present, the bad feature of this procedure is that the ethmoid cells are not completely removed, that there is not good drainage, and there is apt to be trouble later on.

Dr. Harris said that Dr. Cocks' criticism was a just one, and that he had rather anticipated that that question would be raised. The case presented a number of interesting features, and the point which had been chiefly under discussion was probably the most interesting one. His decision, however, had been made after due consideration. It goes without saying that the method referred to by Dr. Cocks is the usual procedure of choice and the one that permits the removal on the anterior cells in the best manner. In this case, though, the boy was in a critical state, and it was felt that every moment was worth saving and the attempt was made to get good drainage as rapidly as possible. Following that line, the frontal sinus was first cleaned out, then a hurried search was made for the perforation, which was not found; then the ethmoid cells were opened, and then another search was made for the opening. One matter was a question of judgment; the other, the point raised by Dr. Coffin, was a matter of fact. There was no question but that the perforation was there, and that it was seen as described. It is only a question of the wisdom, even under the circumstances mentioned, of not doing the usual external exenteration. It might have been wiser to have done the operation that way, but he had stated his reasons for departing from the usual procedure. Dr. Harris said he hoped the fate of his patient would not be that mentioned by Dr. McCoy; but he would follow the case and report the eventual outcome, whether favorable or otherwise.

Dr. MacPherson said that he was present at the operation and his impression was that the perforation was lower down towards the nasal process of the superior maxilla. One of the points that he thought of

was that it had broken through, being an acute case and occurring in an adult; but he could not state exactly where the perforation was. The rupture had taken place into the orbit.

DR. HARRIS said that the perforation was very thoroughly exposed and all engaged saw it. Retractors were put in, and there was a careful and thorough dissection; the eyeball was thrown well out of position, and they simply hunted for the perforation until it was found.

DR. NORTON WILSON said that he could not understand the direction from which the perforation was seen. Was it seen through the orbit?

DR. MACPHERSON, replying to an inquiry from Dr. Wilson, said that he placed the perforation low down towards the articulation of the nasal process of the superior maxilla with the ethmoid.

Gumma of the Pharynx, Laryngo-pharynx and Epiglottis—Gumma of Epiglottis—Gumma of Interarytenoid Space. DR. HARMON SMITH.

(To be published in subsequent issues of THE LARYNGOSCOPE.)

DISCUSSION.

DR. LEDERMAN said he had seen a number of these pharyngeal and laryngeal cases of doubtful diagnosis, and that in private practice it is exceedingly difficult at times to reach a correct diagnosis in regard to them. In one instance, a young man about thirty-five years of age presented himself, claiming that he was hoarse after using his voice considerably at election time. He complained of nothing but hoarseness, and on examination no lesion was observed in the pharynx; but on using the mirror there was noted a marked infiltration and ulceration of the epiglottis, resembling a tuberculous condition,—the peculiar moth-eaten appearance of a tubercular ulceration. He was closely questioned, but absolutely denied any specific history. Examinations of the sputum were made, with negative results, and the fact that in spite of the extensive involvement he did not complain of pain on swallowing, and that he was reluctant in giving a history, strengthened the suspicion that the condition was of specific origin. After a number of visits, he admitted that he had been infected a number of years ago, and had received mercurial inunctions. The condition cleared up under specific treatment, administered internally and locally.

Another patient, male, fifty-five years old, complained of hoarseness without pain; he gave no definite history of having had any symptoms of specific disease, and doubted that he had ever had. He was kept under observation for several weeks. The infiltration involved the true and false cords on the right side. The question arose whether it was a gumatous or a malignant growth. The patient had received some injections of enesol before coming under observation and had also had some treatment internally. Dr. Lederman said he was suspicious of the condition being of specific origin, in spite of the indefinite history and a negative Wassermann. Two other laryngologists saw the patient and they concluded that he was suffering from epithelioma of the larynx. He was also seen by a surgeon with considerable laryngeal experience, and with the history and the report that there was no evidence of its being of specific origin, either by test or local aspect, he advised a hemilaryn-

gectomy. It was decided to put the patient on a mild treatment of iodid of potassium for further observation. In six weeks the entire mass disappeared and the man is still well. Here was a case that almost had part of the larynx removed, and notwithstanding the fact that he had had several injections of an arsenical preparation without effect, the condition cleared up under a mild iodid treatment. This experience emphasized the difficulty that is confronted in reaching a diagnosis in these doubtful conditions.

DR. MCCOY said that he wished to corroborate Dr. Lederman's remarks. Under ordinary circumstances one would think it would be easy to diagnose syphilis or tuberculosis in the larynx. He himself had so thought until recently, when he had a patient who had been referred to him for hoarseness, following a lesion of the vocal cord. Examination revealed an indentation at the base of the right vocal, which was apparently a healed lesion with a roughened surface. His voice was husky, and the question was whether it could be improved or whether it would be apt to get worse. Dr. McCoy said he told the man he did not think it could be improved by local treatment, but as for its getting worse, it had better be watched from time to time. Upon being asked whether he had had any specific treatment, the man replied in the affirmative and said that he had been cured. A Wassermann test was made and proved negative. That was in March. The man was told to report from time to time, and he was under observation for six months. In the early part of October he came in one day and said that his voice was considerably worse, and examination revealed an edema around the original lesion. He was advised to have another Wassermann made and to have his lungs examined, and the sputum examined,—all of which he neglected for a month. When he at last returned, there was considerable edema around the arytenoid, and he was again told that it was important to have his lungs examined. This he finally did, but both lungs and sputum were negative; but a Wassermann was four plus. The appearance of the lesion was not that of a syphilitic condition, being paler and more like a tubercular infiltration, but with the negative signs for tuberculosis and the positive signs in the blood, he was placed on salvarsan and mercury. He ran along for a while and lost weight steadily,—about 20 pounds inside of six weeks. The infiltration got worse instead of better, and finally another examination of the lungs and sputum was made, and they were again pronounced negative. Dr. McCoy said he then suggested taking a section of the infiltration, which was done, and the section proved the condition to be a tuberculous infiltration of the larynx. This man had had both syphilis and tuberculosis, but had so little evidence in his chest and sputum, that in the presence of the four plus Wassermann they were led astray. He has since gone away and is now recovering.

DR. IMPERATORI said that at Riverside Hospital he had seen many cases of four plus Wassermann, in tubercular cases, where the administration of salvarsan proved absolutely negative.

DR. MCCOY said that the salvarsan was given for the effect on the infiltration.

DR. IMPERATORI said that some tubercular patients showed a four plus Wassermann and had received several doses of salvarsan. But in so far

as any result upon the lesions in the throat was concerned which were assumed to be syphilitic, there was none.

DR. WILSON asked if he was correct in understanding the Secretary to say that a patient with a four plus Wassermann would get no benefit from his injections.

DR. IMPERATORI replied that he would not say that but these patients go on from bad to worse, and all those patients that had received salvarsan injections had died.

Replying to an inquiry from Dr. Carter as to whether there was any intercurrent disease, Dr. Imperatori said, that the cases at Riverside were forced in cases and were positively tubercular.

Those cases that gave a four plus Wassermann and had throat lesions, usually died within a few months.

DR. LEDERMAN asked if this was a late occurrence.

DR. IMPERATORI replied that his last service at Riverside was from December to May, 1916.

During the present service he had two cases, but had not given them salvarsan.

DR. HARMON SMITH said that the idea that syphilitic involvement of the larynx is invariably unassociated with pain is fallacious. He had seen a perichrondritis of the epiglottis and arytenoids give the patient considerable pain. The only one of these cases that gave positive evidence of tuberculosis was the patient from Otisville with granuloma of the arytenoid space. She had had no pain and still has tuberculosis. She had received salvarsan treatment and it may be possible later to draw some valuable conclusions from the case. She had a Wassermann four plus and tuberculosis apparently a healed lesion, but she had previously shown the presence of tubercle bacilli and had been dismissed as a cured or arrested case.

Necrosis of the Thyroid Cartilage. DR. KERNAN.

This patient came to Dr. Chappell's clinic at the Manhattan Eye, Ear and Throat Hospital nine months ago, with the history that nearly a year previously she had swallowed a chicken bone which became stuck in her throat. It was removed the same day. She stated that she had considerable pain at the time of the removal. The next day she had lost her voice, and up to the time of her appearance she had been able to speak only in a whisper. She also suffered considerably from dyspnoea.

When she came to the hospital, examination showed great swelling about both arytenoids, and of both ventricular bands and aryteno-epiglottic folds. On the dorsal surface of the left arytenoid was a sinus discharging pus.

The patient was at once tracheotomized. A few days after, under suspension, the sinus was curetted. This resulted in no improvement. Under general anesthesia, the sinus was again probed, and the probe reached bare, rough cartilage on the inner surface of the left wing of the thyroid. An extensive incision was then made through the cartilage into the sinus where lay the point of the probe: The sinus was followed up and was found to lead across the front of the larynx to the dorsal border of the right wing of the thyroid cartilage, where it ended in a

blind pocket at the bottom of which was a loose piece of cartilage. All the cartilage overlying the sinus was removed and the granulations scraped away. The internal opening of the sinus healed promptly. An external sinus persisted for a month at the right end of the external incision, but was finally healed by injections of bismuth paste.

Her voice returned on the removal of the tracheotomy tube, three months after her first visit to the hospital. The explanation of the trouble seems to be that at the time of the removal of the chicken bone, nine months before she came under observation, an injury to the dorsal border of the right wing of the thyroid cartilage, resulted in a perichondritis, with abscess formation. The abscess burrowed beneath the mucous membrane on the inner surface of the thyroid, and finally discharged in the neighborhood of the left arytenoid.

It is not certain whether the specimen presented is a sequestrum or a piece of cartilage torn from the border of the thyroid by the forceps of the original operator. The mere suggestion of this seems to emphasize Dr. Jackson's warning that in removing foreign bodies one should always see what the forceps have hold of.

Luetic Paralysis of the Right Vocal Cord. DR. GEORGE E. DAVIS.

(To be published in a subsequent issue of THE LARYNGOSCOPE.)

DISCUSSION.

DR. HARMON SMITH said that he had been much interested in the case presented by Dr. Davis. In his opinion there had to be some central lesion to create that much paralysis.

DR. DAVIS said that probably Dr. Smith had misunderstood him as regards the seat of the etiological lesion of the throat and ear paralysis, as he had stated in presenting the patient that in his opinion the palatal, pharyngeal and laryngeal paralyses were central in origin, but that it was possible that the lesion in the ear could have been peripheral and occurred ten years previously. In other words, even if it is a case of hereditary syphilis the end organs of the eighth nerve may have suffered before the advent of the other paralyses, though the latter were of a central nervous origin.

The question, however, arises whether the *clinical* symptoms recently manifested were the result of an early *anatomical* lesion (cord paralysis) and were initiated by a complication of the palatal-pharyngeal paralyses, or whether the associated paralyses were all recent. As previously stated, when only one cord is paralysed, it may not occasion clinical signs for a long time, and go unnoticed by the patient.

While it is possible the cord lesion may be of long standing and the palatal and pharyngeal lesions of recent date yet it is not probable, and I am strongly inclined to the opinion that the mere association of these paralyses of the larynx and pharynx argues that they are of central origin and their advent contemporaneous with the clinical manifestations.

Report of a Case of Rhinophyma Treated by Decortication and Skin Grafting. DR. JOHN J. KERNAN.

This patient was fifty-five years old, and was an inmate of a state institution. Ten years ago his nose began to grow larger, and this con-

tinued to the past summer. A picture presented showed the man's appearance ten years ago—at the beginning of the condition—and another showed the condition in August, 1916, at the end; and still another showed the condition after operation. Dr. Kernan also presented a specimen of the tissue removed from the nose.

The operation consisted of making an incision entirely about the growth, taking care to go through the skin so as to reach the full depth of the pathological tissue. The whole was then skinned off and the whole area grafted with Thiersch grafts. The wound healed up very nicely.

DISCUSSION.

DR. MCCOY told of a similar case seen a couple of years ago, but this patient did not return for exhibition. He had a very extensive growth up to the side of the cheek on both sides. The dissection was made from one side and the graft from the arm put on. A week later the other side was treated similarly. The result was exceedingly good.

Osteoma of the Ethmoid. DR. COFFIN.

This patient had presented herself at the Clinic two days previously and many of those present had seen her. The growth, as could be seen, is very hard and encroaches upon the orbit; it can also be seen in the nostril, where it is equally hard. The patient had been examined a great deal during the day, both in the eye and throat departments and though she said that she felt sick from so much handling, she consented to come to the meeting. Dr. Coffin requested that curiosity to palpate be omitted as much as possible. Dr. Coffin showed x-rays plates of the case and described the findings. They showed a bony growth about the size of a hen's egg, growing from the horizontal plate of the frontal bone, involving the orbit, ethmoids and nasal chamber of the left side. The patient first noticed the growth about eight years ago. It started as a small, hard lump just below the ridge of the eyebrow and grew slowly until the last two years. She has good vision, but some vertical headache. A friend of the patient had stated that at one time, previous to the appearance of the growth, she was hit over the eye by a fist.

DISCUSSION.

DR. MCCOY said that he had seen a somewhat similar case about a year ago. The question in his mind arises whether this is an osteoma or an osteosarcoma. In a case that he had seen a year ago the growth was in the same position, but as he remembered it, it was not so slow a growth. The diagnosis of sarcoma was verified at operation later. It might be well before operation to take a section with that idea in view.

DR. COFFIN replying to Dr. McCoy's suggestion about taking a section before operation said that it would not make any difference, as he would operate in this particular case anyway.

Foreign Body Removed from the Bronchus of a Child. DR. MCCOY.

The patient came with a history of having been chewing some peanuts four weeks previously, and suddenly inhaled some of the material and since that time had had a constant cough. The child had been first taken to an osteopath, who rubbed the chest for four weeks, but as they could not see that the child was getting any better, the patient was

brought to Dr. McCoy. Under ether examination, the peanut could be plainly seen. A very thin pair of forceps was then obtained and the peanut was removed. The peanut had swollen so that while it went through the chink of the glottis there was difficulty in getting it out. While it could get through in the first instance, after being bathed in secretions for four weeks it became swollen. The child was suspended, and then with Jackson's thin forceps the foreign body was grasped and brought up to the chink, but it would not come out. The tube was then taken out, and the child inhaled the peanut again. It was again brought up to the cord, only to have the same thing happen once more. The third time the tube was removed quickly and with a hook the peanut was held, while with another hook it was delivered through the vocal cords. It was feared that it would break up, but it came out very nicely. The child had no reaction, went home the next day, and has since been perfectly normal.

DISCUSSION.

DR. IMPERATORI said that this was rather an unusual case; for a peanut is considered one of the most dangerous types of foreign bodies one has to deal with. It was unusual, in that it had remained in the bronchus or trachea over a month and had apparently produced no irritation. He knew of three cases of unremoved peanuts that had caused death within five days after their entrance into the tracheobronchial tree.

Another interesting experience was the case that stimulated the work he had presented before the American Laryngological, Rhinological and Otological Association last May.

One was tempted to use too large a bronchoscope and when placed in the bronchus and pushed down a dilating effect is produced. As a rule, when this dilating effect of the bronchoscope is produced in the human, we are made aware of this effect by the individual, even when under an anesthetic, either breathing more rapidly or taking deeper inspirations. In animals the effect of pushing a bronchoscope into the smaller bronchi is to immediately show inhibitory influences in the carotid tracings. These vagal beats, as shown in the tracings, are manifested as soon as the bronchoscope touches the carina trachea. When the smaller bronchi are dilated they are very pronounced.

It may be possible, that some of the fatal cases during bronchoscopy are due to cardio-respiratory inhibition, to traumatism, acute pneumothorax or plueral shock.

DR. CARTER asked how Dr. McCoy managed to handle the peanut so delicately as not to break it.

DR. MCCOY said that he did not know whether the peanut that had been swallowed was raw or roasted, and he had expected to have a great deal of difficulty. When he put the hook below to get it up to the glottis a small piece broke off, which he was able to get out with the suction tube. Why it did not break more, he could not say, excepting that it was manipulated with great care and delicacy. Jackson's forceps, as all knew, was very thin, almost like a wire, and has two very fine prongs, and if the foreign body is caught delicately with them it can be pulled along with little trouble. While the specimen did not look very much

like a peanut, it could be nothing else. It was certainly a very interesting piece of work to get it up and get it out.

DR. WILSON asked if it was not possible to get the peanut out with the suction apparatus.

DR. MCCOY replied in the negative.

DR. FORBES said that the most interesting point was the method of removing the object, which was that of combined suspension and bronchoscopy. The second point was the length of time during which the peanut had been in the bronchus, and its comparative non-friability. The third point, which he could not quite understand was why, even with the most delicate forceps and careful manipulation in bringing it up, it was not broken. In an another, recent case, only a few days before, where the peanut had been in the bronchus only three days, it broke into a number of pieces and most of it was removed by suction, some by the forceps. Dr. Jackson claims that with the suspension apparatus and the bronchoscope it is impossible to move the neck at the right angle to look down into the smaller bronchi, in fact an object of this size could hardly have been very far down in the bronchus with a child of four years old. If it had been in the main bronchus, it would have been easy to see it with combined suspension and bronchoscopy; but otherwise, Dr. Forbes said he did not see how the angulation could have been such that Dr. McCoy touched it. It would be interesting to know the size of the tube used.

DR. MCCOY replied that he had used the 4 tube the first time, and the 5 tube the second time.

Two Cases of Foreign Body Removed from the Esophagus. Presented by DR. PRATT for DR. COAKLEY.

1. Tooth Plate Removed from the Esophagus.

The specimen consists of a solid rubber plate with three teeth on it, and also a wire ring attached to the plate for the purpose of fastening it to the teeth.

The patient, a woman thirty-four years old, came into Bellevue Hospital on January 12, and gave the history that four and one-half hours earlier, while eating, the plate became detached and she accidently swallowed it. She was rather excited and hysterical, but seemed more concerned by the fact that she did not have money enough to purchase another plate than that the plate was in her esophagus. She was at once sent for a radiograph and through some mistake was given a Bismuth meal. When we were ready to examine the patient the radiographer reported that there was no foreign body to be seen in the plates, but that the entire esophagus was beautifully outlined with bismuth. She was then fluoroscoped and the plate very plainly seen lying almost transversely across the esophagus, just below the cricoid. She was then radiographed a second time, the bismuth having been absorbed by this time. (The plates were shown.)

Chloroform anesthesia was given and a Mosher No. 9 esophagoscope was passed. The object was seen about eleven inches from the gums, lying almost transversely with only the three teeth presenting. An attempt was made to grasp it with the alligator forceps, but owing to the thickness of the plate this could not be done. A blunt hook was then

passed down to the left and the plate gradually turned until the wire ring presented. This was seized and the plate easily withdrawn.

2. Chicken Bone Removed from the Esophagus.

This patient came in the following day. He is a man fifty-four years old who, twenty hours before operation, while eating chicken soup, swallowed a bone. He was admitted on a Saturday night and no radiograph could be obtained. A Mosher 13-inch tube was passed and the bone seen about thirteen inches from the teeth. It was nearly square in shape, sharply pointed on three corners and somewhat rounded on the other. It was very firmly wedged in place and required a considerable amount of manipulation to remove it. No anesthesia was used, except a four per cent cocain sprayed into the throat.

DISCUSSION.

DR. MCCOY said that these were very interesting cases and asked if there was an inflammatory reaction in either case.

DR. PRATT replied in the negative, stating that both were very recent cases, one of only four, and the other of twenty hours standing. In the second case the man first went to his family physician, complaining at that time of pain in the region of the cricoid. The family physician passed a stomach tube, after which the patient complained of the pain in the mid-sternal region.

DR. MCCOY said that he had had a case a month ago in which the patient gave a history of eating chicken fricassee and swallowing a piece of bone, which gave pain in the esophagus, and after twenty-four hours she could not swallow food or even drink water. She carried it around for three days, and was finally sent to him. On passing the esophagoscope it went to the level of the sternum and there encountered an obstruction. The whole of the esophagus was much inflamed and on reaching the point where the bone had stuck, a half dram of pus was discharged. The foreign body had become jammed in and formed a localized abscess which had closed over the esophagus entirely. After emptying out the pus, a chicken bone ¾x⅛ of an inch was found, and removed. The patient went home all right.

DR. IMPERATORI said that last year he saw a case similar to that of the tooth-plate case of Dr. Coakley's presented by Dr. Pratt.

The patient, a foreigner, had swallowed a tooth-plate some forty-eight hours previously. The family physician made an attempt to dislodge the foreign body by the use of the umbrella probang, but this procedure was unsuccessful.

Using the Bruenings tube, a foreign body was localized 26 c.m. from the teeth. An attempt was made to rotate the plate, using the Jackson rotating forceps and the Mosher esophagoscope. The plate was so fixed in the tissue of the esophagus, that it was considered a dangerous procedure.

Finally with a strong cutter, the plate was broken in three pieces and these were removed very easily.

The only thing to be regretted was that the patient insisted on keeping the fragments, and so the specimen was lost. This case was done under local anesthesia.

PHILADELPHIA LARYNGOLOGICAL SOCIETY.

Meeting of February 6, 1917.

Extra-dural Abscess of the Anterior Inferior Part of the Middle Fossa Secondary to a Simple Mastoid Operation.

Dr. J. Clarence Keeler presented the notes on a case, Charles M., age 24, single, who on January 1, 1914, following exposure, developed coryza and right earache. Pain was relieved on the fourth day by spontaneous rupture of the drum, followed by a blood-streaked discharge.

When seen twelve days later, the right ear protruded. The mastoid was red, swollen, edematous and very tender. There was profuse aural discharge. There was drooping of the superior and posterior wall. The mastoid was opened and pus found throughout. The cells were exenterated, free drainage established and the wound closed in the usual manner. An apparently uninterrupted recovery followed and the patient was discharged during the third week.

Four weeks later he was readmitted to the hospital with swelling over the right mastoid extending over the temporal region and face. There was edema of the lids partly closing the eye. Temperature, 102; pulse, 110; respirations, 27.

The mastoid was reopened. The incision was continued to the front of the ear along the zygomatic bar near to the outer angle of the lids. The zygomatic cells were unusually large and filled with pus. A large abscess was found in the temporal and zygomatic fossae which had eroded through the cranium and exposed the dura of the anterior part of the middle fossa protected by granulations. The pus was evacuated, drainage instituted and the wound closed. A rapid and uneventful recovery followed. Culture showed the pus to be pneumococcic.

Septic Thrombosis of the Mastoid Emissary Vein Secondary to Simple Mastoid and Metastatic Abscess.

Dr. J. Clarence Keeler presented the notes on Miss Lena K., age 21, who in December, 1915, developed severe pain of sudden onset in the left ear. The tympanic membrane was red and bulging. After free incision of the drum under local anesthesia, a mixture of blood and pus was extracted by suction. The discharge continued. The pain increased. A simple mastoid operation was performed, revealing large cells over a wide area, so extensively necrosed and pus-filled as to necessitate a transverse incision. The emissary vein was exposed near its junction with the lateral sinus.

On the second day after operation there was a slight chill with rise of temperature to 102.4. A cellulitis developed on the same side of the face. There were more chills and a temperature of 105.4. Leucocytes, 20,000; polynuclear, 75 per cent. The pus culture showed streptococci. A metastatic involvement of the right should and elbow developed.

The wound was reopened. The sinus appeared uninvolved. The emissary vein was found thrombosed. It was ligated and resected, the sinus was opened to encourage free bleeding. The wound was closed by packing. The patient proceeded to a rapid recovery.

Profiting by the observation in this case, he has since ligated the emissary veins in a case of acute bilateral mastoiditis, where they were exposed to trauma.

The location of the emissary vein renders it more susceptible to injury in extensive mastoid necrosis, and a more common focus of infection than has generally been supposed.

Why the End-Results of Some of Submucous Resections are Unsatisfactory.

(To be published in a subsequent issue of THE LARYNGOSCOPE.*)*

Dr. Louis C. Vattier stated that submucous resections have in many cases failed to relieve the symptoms, because the greater portion of the bony septum or perpendicular plate of the ethmoid has not been removed by the operator, thus leaving the area designated by Ballenger "the vicious circle," unrelieved of obstruction to its drainage and aeration. In these cases the secondary operation is made through a high "T"-shaped incision, the procedure being otherwise similar to that used in a primary operation.

In the discussion following, Dr. Robert Ridpath called attention to the necessity of removing the ridge of the vomer, for which he uses a Hajek chisel.

Dr. George Mackenzie called attention to the necessity of seeing that the vestibules are not obstructed by the malposition of the semilunar cartilage.

Epistaxis.

Dr. Charles F. Adams reviewed the common causes of nasal hemorrhage and enumerated the various general and local measures employed in its control. Among the former were mentioned emetine, coagulose and pituitrin hypodermically.

As a local measure the use of the Bernay splint was preferred to gauze packing. Ligation suture was recommended for bleeding from the anterior portion of the septum.

Dr. Hoyt called attention to the use of andrenalin brushed on the septum as a means of locating the source of the hemorrhage. The bleeding point will stand out as a brilliant red point on the blanched mucosa.

Spinal Therapy as Applied to Diseases of the Nose, Throat and Ear.

Dr. Lawrence Simcox endeavored to show the advantages of vertebral adjustments (Spondylo-therapy), as an adjunct to the local treatment of nose, throat and ear conditions. He states that diseases of these organs are associated with subluxations of certain cervical vertebrae, viz.: middle ear disease with that of the fourth cervical, internal ear with the axis or atlas, eye conditions with the third cervical, laryngeal conditions with the sixth cervical, pharyngeal conditions with the lower cervical and mid-dorsal vertebrae.

The theory is that displacements cause pressure on trophic nerve fibers, supplying the organs. These fibers make their exit at the intervertebral foraminae.

He claims that the reduction of these subluxations has a favorable influence on the diseases in question, claiming to have brought about cures in a numer of cited cases. He depends upon palpation for the diagnosis of the subluxation. He urges physicians to familiarize themselves with the teachings so that any of its possible advantages may be utilized in conjunction with such skillful medical measures as may be indicated. This is preferable to having the method exploited as a panacea by irregular practitioners.

Dr. J. Solis Cohen stated there may be a lymph stasis at these openings which manipulation disperses.

SIDNEY L. OLSHO, *Reporter.*

OBITUARY NOTICE.

PROFESSOR FERDINANDO MASSEI. NAPLES, ITALY.

Born, July 25, 1847.

Died, March 7, 1917.

In the death of Massei of Naples, Italian Laryngology has lost its *doyen* and all who knew him have lost a dear and charming friend. For some of the following notes of his career we are indebted to a notice by Dr. Grazzi, in the *Bollettino delle Malattie dell'Orecchio, etc.*

Ferdinando Massei came of a good family in Naples, where he was born, studied and qualified. In the year 1868 he started a *Wanderjahr* through Europe and was much impressed with the importance of laryngology, which was then in its infancy. He decided to devote himself to it and therefore followed the clinics of Mandl and Waldenburg in Germany; Fauvel in Paris, and Morell Mackenzie in London. Returning to Naples at the end of 1869, he started practicing in the specialty he had selected, opening a free dispensary for diseases of the nose and throat, and he soon attracted numerous doctors and students. A few years later the University recognized his course of lectures. In 1882 he was made *Liber Docent,* and from that year until the day of his death at the age of 70 he taught regularly. In a letter in February last, he laments that his clinic was so crowded. He was made Professor in 1902.

After the death of Prof. Cozzolino the chairs of Otology and Laryngology were united and at my last visit to Naples, a few years ago, I found Massei very satisfied in having, at last, a well-equipped clinic.

Massei was a hard worker and a ready writer. He himself founded the *Archivii Italiani di Laringologia* in the year 1880, and remained its director up to the last. We have frequently made abstracts from it in these pages. Besides, he must have himself written more than two hundred articles, and amongst them we recall the following: Peri-tracheal Abscess in Children; Laryngeal Complications of Carcinoma of the Skin; Congenital Laryngeal Stridor; Erysipelas of the Larynx; Treatment of Laryngeal Papillomata *per vias naturales;* and Anesthesia of the Larynx in Recur-

rent Paralysis. He wrote a treatise on "Diseases of the Nose and Throat," which was translated into German, Spanish and Russian, and is still well worth studying. He was justly proud of his statistics of laryngeal tumors for he doubtless had a larger clinical experience of these than any other laryngologist in Europe.

He held numerous hospital appointments in Naples. He was Superintendent of the Diphtheria Hospital where he was one of the first to employ intubation. Indeed, he was Honorary Consulting Laryngologist to nearly all the hospital of Naples and his services were not merely honorary, as he was always ready to give practical help at almost any hour.

It is not necessary here to enumerate all the learned societies of which he was a member, but it might be recalled that he was one of the founders, and later president of the Società Italiana di Laringologia; Honorary Fellow of the old Laryngological Society of London, and that he was the sole representative of Italy amongst the select ten honorary fellows of the American Laryngological Association.

As he "arrived" early, was a leader of Italian Laryngology and inhabited the largest city in the Peninsula, it is not surprising that he had a very large practice. But he was a generous man and was never happier than when helping the poor. The commercial side of the profession was his last thought and he was fond of saying that the consciousness of work well done was our best reward and that money was only a means for living.

Massei was not only energetic and learned, but his mind was nimble and he had a ready flow of well-chosen words. Hence, he was always welcome at scientific gatherings and many of us had the pleasure of meeting him at the International Medical Congress in Rome or the Otological Congress in Florence. At these congresses he was the more welcome as he was generally accompanied by his charming wife, who possessed so much of the well-known fascination of her country-women that whenever I met her I was reminded of the poet who described the daughters of that sunny land as having

"Gli occhi stellanti e le serene ciglia
La bella bocca angelica, di perle
Piena, e di rose e di dolce parole."

As Dr. Grazzi writes, Massei cannot easily be replaced; he was a genius in his own line and he passes away amidst the admiration and regret of all his colleagues. We venture to transmit the sympathy of his colleagues in this country to his family and to his son, Professor Raffaello Vitto Massei.

ST. CLAIR THOMSON.